

SEX, STATUS AND ROLE IN THE MESTIZAJE
OF SPANISH COLONIAL FLORIDA

By

Kathleen A. Deagan

A DISSERTATION PRESENTED TO THE GRADUATE
COUNCIL OF THE UNIVERSITY OF FLORIDA IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA
1974

UNIVERSITY OF FLORIDA



3 1262 08666 398 5

ACKNOWLEDGEMENTS

The research for this dissertation was funded by National Science Foundation Doctoral Dissertation Grant GS-36839, and the author was supported by a University of Florida Anthropology Department Graduate Assistantship while in the Field; and by a University of Florida Graduate School Fellowship during the preparation of this dissertation.

It is a truism that one's results are only as good as the data on which they are based, and an archeologist realizes this most keenly when the time comes to write a report based on Field data. This dissertation is based on data which met severe contextual and stratigraphic requirements, and in the final analysis included less than half of the excavated material; all of which, however, was used with complete confidence that it was truly applicable to the problems toward which the excavation was oriented. For this I would like to thank Stephen Cumbaa, Nicholas Honerkamp, Carlos Martinez, John Otto and Russell Lewis; all graduate students in archeology and the field crew at the 1973 excavation of the de la Cruz site. Without their understanding of the problems involved and their skill in the field, the data on which this study is based would not be nearly so reliable.

I would also like to thank John W. Griffin, and the staff of the Historic St. Augustine Preservation Board, who provided equipment,

supplies and housing for the field crew, as well as free access to all of their resources. Their hospitality and cooperation made our stay in St. Augustine pleasant and comfortable, particularly the daily help and mechanical innovation we received from Mr. Sterling Reyez and Mr. Haynes Grant.

Acknowledgement is also due to Robert Steinbach of the Historic St. Augustine Preservation Board, for his technical advice, and for his time, which was freely given to me, in discussing St. Augustine archeology, and helping me clarify many of the problems in the excavation and interpretation of the de la Cruz site.

I would like to thank Dr. William R. Maples, chairman of the Social Sciences Department of the Florida State Museum, and Dr. J. C. Dickinson, of the Florida State Museum, for providing me with office, lab and storage space during the analysis of the material from the de la Cruz site, and the preparation of the report. I received a great deal of help from other Florida State Museum Staff members, including Mr. Jerry Evans, Ms. Malinda Stafford, Dr. Pierce Brodkorb for the identification of bird remains; and particularly from Mr. Stephen L. Cumbaa of the Zooarcheology lab for his very thorough interpretive analysis of the faunal remains from the site, which is included in Chapter IV.

Technical advice in interpretation of the material from the site was received from Dr. Barbara Purdy of the University of Florida Social Sciences Department, who discussed the flint material from the site and gave advice, and Dr. F. N. Blanchard, who carried out the analysis of

the petrographic samples. I would also like to thank Mr. David Hall of the University of Florida Herbarium, for the time he generously gave to the identification of the plant remains from the site, including the identification of Florida's Oldest Orange.

Dr. W. E. Nesmith of the University of Florida carried out the analysis of soil samples and discussed the results with me; and technical advice on ceramics and clay samples from the site was given by Mr. Chris Hierholzer of the Street Urchin Pottery in St. Augustine. Advice, consultation and help in producing the illustrations for the dissertation were provided by Mr. Jonathon Rogers of St. Augustine, Florida.

I am particularly grateful to Ms. Lydia Deakin, secretary of the University of Florida Anthropology Department, whose wit, efficiency, and continual help were instrumental in getting me through graduate school and this dissertation.

I would also like to thank the members of my committee, Dr. Theron Nunez, Dr. E. Thomas Hemmings, Dr. Paul Doughty, and Dr. Michael Gannon for their cooperation and help throughout my entire doctoral program, and also Dr. Jerald Milanich of the University of Florida Anthropology Department, who gave freely of his time, advice, and criticism during this project, and whose work has helped clarify my concept of Spanish-Indian relations in Florida.

Other intellectual debts are owed to the work of Charles Fairbanks and Hale G. Smith in Florida, to Ivor Noel-Hume's work in colonial material culture, to Edward Spicer and George Foster's accultura-

tion studies, and also to Stanley South of the South Carolina Institute of Archeology and Anthropology, whose generous advice helped me realize as a student what was relevant in archeological data, and how to obtain it.

Documentary research was carried out primarily in the Stetson Collection, located in the P. K. Yonge Library of Florida History at Gainesville; and the collections of the St. Augustine Historical Society, located in their library in St. Augustine. I would like to thank the staff members of those libraries for their help and cooperation.

I come finally to that debt which is impossible to acknowledge, to my chairman, Charles H. Fairbanks. Having, for the course of my studies, been taught, befriended and provided with an academic, intellectual and humanitarian example by Dr. Fairbanks; it is with gratitude and affection that I acknowledge him as chiefly responsible for any academic contributions this work may have, while assuming myself full responsibility for its shortcomings.

TABLE OF CONTENTS

Acknowledgements.	i
List of Tables.	vi
List of Figures.	vii
Chapters	
I. Indian-Spanish Interaction in Colonial St. Augustine.	1
II. 18th Century Acculturation: A Pro- cessual Hypothesis.	32
III. Testing the Hypothesis.	44
IV. Results of the Hypothesis Test.	72
V. Sex, Status and Role in the <u>Mestizaje</u> of Spanish Colonial Florida.	139
Bibliography.	153
Appendix I Dating the Site: Ceramic Data.	169
Appendix II Dating the Site: Pipestem Data.	170
Appendix III Measurement Data for Green Glass Bottles.	172
Appendix IV Results of Petrographic Analysis by F. N. Blanchard.	174
Figures	179
Biographical Sketch	219

LIST OF TABLES

1. Distribution of San Marcos Pottery.....	75
2. Distribution of San Marcos Pottery Surface Decoration.....	75
3. Faunal Remains from Closed Proveniences	87
4. Beads from Closed Proveniences	109
5. Distribution of Tableware Ceramics	120
6. Distribution of Majolica	120
7. Distribution of Delftware Decorative Elements	123
8. Distribution of Slip-Decorated Earthenwares	124
9. Distribution of Refined Earthenwares.....	126
10. Closed Proveniences Dating Creamware--A	128
11. Closed Proveniences Dating Creamware--B	129
12. Ceramics from Midden Area	130
13. Distribution of Glassware	133

LIST OF FIGURES

1. The Puente Map	180
2. The Jeffries Map	181
3. Excavation Plan and Foundations at SA-16-23	182
4. Water Disposal Technique	183
5. Map of Kitchen Area	184
6. Map of North Outbuilding Area	185
7. Map of Courtyard Area	186
8. First Appearance of Barrel Well	187
9. Profile of Barrel Well	188
10. a. Excavation of Barrel Well	
b. Staves from Barrel Well.....	189
11. Profile of Coquina Well	190
12. San Marcos Stamped Sherds	191
13. Spanish Utilitarian Earthenware Sherds	192
14. Handles from San Marcos Vessels	193
15. San Marcos Ceramics Exhibiting European Influence.....	194
16. Non-ceramic Food Preparation Equipment.....	195
17. Sherd Discs, Marbles, and Child's Thimble.....	196
18. Iron Hinge and Iron Spike	197
19. Iron Key and Brass Hardware	198
20. Gunflints and Gunspalls	199
21. Brass Gun Hardware	200
22. White Clay Pipe Fragments	201
23. Women's Craft Items	202
24. Beads from Closed Proveniences.....	203
25. Buttons from Closed Proveniences.....	204
26. Metal Buckles.....	205
27. Ebony <u>Figa</u> Amulet.....	206
28. Majolica Vessel Profiles.....	207
29. Majolica Sherds.....	208
30. Delftware Sherds.....	209
31. Slip-Decorated Earthenware Sherds.....	210
32. Creamware Sherds.....	211
33. Refined Earthenware Sherds.....	212
34. Blue and White Chinese Porcelain.....	213
35. Ornamental Glass.....	214
36. Tableware Glass.....	215

Digitized by the Internet Archive
in 2009 with funding from
University of Florida, George A. Smathers Libraries

<http://www.archive.org/details/sexstatusroleinm00deagrigh>

37. Olive Green Glass Bottle	216
38. Olive Green Glass Jar.....	217
39. Mexican Thick-Knee Watchbird	218

Abstract of Dissertation Presented to the
Graduate Council of the University of Florida in Partial
Fulfillment of the Requirements for the Degree of Doctor of Philosophy

SEX, STATUS AND ROLE IN THE MESTIZAJE
OF SPANISH COLONIAL FLORIDA

By

Kathleen A. Deagan

June, 1974

Chairman: Charles H. Fairbanks
Major Department: Anthropology

The hypothesis that in 18th century St. Augustine, acculturation was primarily effected by Indian women in Spanish or mestizo households within a predominantly male-oriented (military) cultural milieu is tested through archeological, ethnohistorical, zooarcheological and ethnographic research. Archeologically testable implications of this hypothesis are offered, tested and confirmed. Mestizaje and acculturation in Spanish colonial Florida are analyzed and a model for mestizaje as a process of acculturation is proposed. Material correlates for mestizaje are suggested, and used to illustrate method and theory in Anthropological Historical Archeology, and its role in developing theory, and in problem-solving for Archeology as a discipline.

CHAPTER I

INDIAN-SPANISH INTERACTION IN COLONIAL ST. AUGUSTINE

The Pre-Guale Period

At the time when the first results of Spanish contact and interaction were felt by the newly enslaved and disease-ridden Indians of the Caribbean and Latin America, the Indians of Florida were still virtually unaffected by European contact.

Although Florida had been known and explored by the Spanish since the very early part of the 16th century, it was not until the second half of the century that a permanent settlement or a serious base for Indian-Spanish interaction was formed. This interaction base in Florida was the mission system, outside of which very little Indian and Spanish contact occurred during the 16th and 17th centuries (See Sturtevant 1962; Fairbanks 1957; Deagan n.d.)

The initial, and most intensive Spanish-Indian interaction took place in the area surrounding St. Augustine, the first permanent Spanish settlement in Florida. This early interaction provided the roots for the later processes of Indian-Spanish miscegenation, or mestizaje, which operated during the 18th century, and it was in St. Augustine that the earliest records of such interaction are found.

When the Spaniards first settled in Florida, the area

surrounding St. Augustine was occupied by the Saturiwa Indians, one of the several tribal groups comprising the Eastern Timucua (Deagan n.d.). The Saturiwa occupied the lower course of the St. Johns River and the coastal area opposite the river. This region included the St. Johns River itself, extensive pine flatwoods, and coastal lagoons and estuaries; all of which were exploited by the Saturiwa. The subsistence system was based on fish and shellfish, both fresh and salt water, as evidenced by the extensive middens along the river and the coast. Fishing, hunting and gathering were, no doubt, also important parts of the subsistence base, with deer, alligator, fowl, and turtle as important food items. In historic times, the Saturiwa were part-time horticulturalists, growing maize, beans, pumpkins, cucumbers, citrons, and gourds (Hacklyut 1903(8):445; Ribault 1964:73), although they tilled for only half of the year and went into the forest to hunt and gather during the winter months (Hacklyut 1903(8):456).

In prehistoric times the Saturiwa area was characterized by the St. Johns archeological complex, which included chalky pottery, burial mounds, and diffuse shell middens (Goggin 1952). This complex was continued into early historic times, evidenced by burial mounds containing European trade material, such as the Dunn's Creek mound (Moore 1894:8) in Saturiwa territory, which contained burials with St. Johns chalky ceramics and associated historic material, including ornaments, metal implements, and a bell. Lower levels of the mound contained trade materials from the aboriginal cultures of west Florida, but

these were no longer present in the historic level. Another site in the same area, North Mound, Murphy Island (Pu-20) contained historic burials which were intrusive into a mound constructed in earlier (ca. AD 1000) times (Moore 1896: 503-515). Archeological evidence indicates that by the late 16th century mound burial was being replaced by cemetery burial among the Saturiwa. The Fountain of Youth site in St. Augustine contained a group of Indian burials extended flat on their backs, with their arms crossed over their chests. Although few grave goods were encountered, the presence of glass beads and an iron spike implied that the cemetery dated from the late 16th century (Goggin 1952: 4; Seaberg ms).

From the writings of Frey Francisco Pareja, Jaques LeMoyne, Jean Ribault and Rene Laudonniere, the culture of the late 16th century and early 17th century Saturiwa can be partially reconstructed. Detailed summaries of Saturiwa culture traits can be found in Swanton (1922:345-387) and Milanich and Sturtevant (1972:39-48).

Saturiwa social organization was similar to that of many other Southeastern Indian tribes, featuring ranked, matrilineal clans with names such as Deer, Panther, Bear, Fish, Earth, Buzzard, and Quail (Gatschet 1878:492-493). Inheritance was through the mother or mother's brother (Phillip 1593), and clan membership determined the chiefs and other officials (Gatschet 1878:492), with the White Deer Clan giving rise to the head chief or holata ico.

The information given by Francisco Pareja indicates a caste-

like social system, probably like that postulated by William Sears for the circum-gulf region (Sears 1954). Each village had its own chief, and these were under the jurisdiction of a head chief who extracted tribute from his subjects (DeCampo 1601).

Priest-shamans were present among the Saturiwa, and were powerful religious-medical practitioners. The role of the shaman in the culture is well illustrated by Pareja's 1613 Confessionario (Milanich and Sturtevant 1972), and constituted a focus toward which much Franciscan religious energy was directed.

The Saturiwa lived in palisaded villages with circular, thatched huts of palm "after the fashion of a pavilion" (Ribault 1964:83). Villages also contained a central longhouse "with reed settees all about" which were set two feet off the ground and were used as both seats and beds (Ibid.). This was certainly a public building, probably for both civil and religious activities.

At the time of Laudonniere's account (1565) the Saturiwa towns formed a confederacy under a chief also named Saturiwa, who was the head of a town near the mouth of the St. Johns River. There were 30 other town chiefs under Chief Saturiwa, and they came together to wage war against the two large Western Timucua confederacies of Potano and Utina (Hacklyut 1903(8):454). By 1602 this pattern of organized warfare had ceased or was inactive.

The Saturiwa first experienced European contact with the French expedition to Florida under Jean Ribault in 1562. By 1564 Rene de

Laudonniere had established Fort Caroline in Saturiwa territory, near the mouth of the St. Johns River. Saturiwa-French relations were generally amicable and based on trade; deer, fish, turkey, and corn in exchange for hatchets, mirrors, knives, combs, beads, and cloth (Le Moyne in Bennett 1968:104).

Although the Saturiwa helped the colony at Fort Caroline by building portions of the fort and providing food, they were frequently alienated by the French demands for supplies, often "extorted by blows" (Le Moyne in Bennett 1968:98). The French were also involved in the military affairs of the tribe, and the Saturiwa were anxious for French assistance against the Utina confederacy, which was their most ancient enemy (Hacklyut 1903(9):12). Although Laudonniere agreed in 1565 to send some of his soldiers with Saturiwa against Utina, his main concern was to form alliances with all of the Indian confederacies (Ibid.).

The Saturiwa-French relations were based on trade and mutual militarism, and it was not until after the arrival of the Spanish and the establishment of the Franciscan missions that any appreciable change was brought about in the Saturiwa culture.

The establishment of a French settlement at Fort Caroline provided the impetus for the Spanish settlement of Florida in 1565. The site of St. Augustine acted not only as a deterrent for further French enterprise after the massacre of Laudonniere's party, but it was also of strategic military importance as the guardian of the straits of Florida, through which the flota sailed after leaving Mexico. Pedro Menendez

de Aviles sailed to Florida in 1565 to rout the French and establish his *adalentadomiento* of the land in the name of Phillip the Second of Spain. With 800 people, Menendez arrived in 1565, and defeated the French at Fort Caroline. Although the Saturiwa did not play a major role in this affair, they remained loyal to the French and pledged support to Dominique de Gourges during his punitive raids against the Spanish in 1567 (Hacklyut 1903(9):102-104). De Gourges was unable to drive the Spanish out of the former Fort Caroline, and after this incident, Spanish settlement and Indian contact was concentrated in the St. Augustine area.

Even prior to the De Gourges expedition in 1567, Spanish missionaries were attempting conversion of the Florida Indians. With the founding of St. Augustine in 1565, immediate attempts were made by Pedro Menendez to procure missionaries for Florida. In 1566 he wrote: "I had told them (the Indians) that those religious were coming on the next ship and would soon talk with them and instruct them on becoming Christians; and now, as no religious came, the natives think that I am a liar, and some of them have become angry and accuse me of deluding them." (Menendez 1566).

In 1566 the Jesuits arrived, and remained in Florida until 1572 when their attempts at missionization ended in withdrawal (see Gannon 1965). Their contact with the Saturiwa had no discernible, lasting effect on the culture, and it was not until the Franciscans arrived in 1577 that the changes which were to alter and ultimately eliminate the native

Florida cultures were put into effect.

Between 1577 and 1596, Franciscan missions had been established among the Saturiwa at Nombre de Dios (St. Augustine), and San Juan del Puerto (near the mouth of the St. Johns River), and these remained the main mission centers for the Saturiwa throughout the mission period.

The most intensive mission activity was in the vicinity of St. Augustine; the only permanent settlement in Spanish Florida until 1699. In 1602, Don Alonso Sando Saez Mercado, testifying at the investigation of the success and fate of the Florida colony, named Nombre de Dios, Palica, Nombre de Dios Chiquito, Capuaca, Solo, San Pablo, and Caherica as Indian villages near St. Augustine, and he noted that these were all Christian villages (Arnade 1959:29). Nombre de Dios and San Pablo had churches, although religious services were conducted in all of the villages by a visiting priest or, in his absence, by the Indian Fiscales (Ibid.).

Archeology has revealed little of the life of the Timucua mission Indian. Possible mission sites in the Saturiwa area include San Juan del Puerto (Du-53), partially excavated by William Jones (J. MacMurray 1973); Wrights Landing (SJ-3) (Goggin 1953:6), which is believed to be the site of a relocated Guale mission, Nuestra Senora Guadalupe de Tolomato; and Rollestown (Pu64b) which may have been the site of the mission of Salamatoto (Goggin 1953:5). The site of the mission of Nombre de Dios in St. Augustine has been located and identified, although

none of these sites have been fully excavated at this time. Solely Timucua occupation at these mission sites seems to have been sparse and of short duration. Small amounts of the indigenous St. Johns ceramics are present (Goggin 1952), but the ceramic type which predominates on historic Florida Indian sites is San Marcos (Smith 1948), introduced during the 17th century by the Guale Indians. No structures have been excavated at any of the sites discussed above, but there was evidence at San Juan del Puerto of a palisade, and also of individual, circular shell middens which may represent dwelling sites. (W. B. Jones personal communication. St. Augustine 1973).

The Indian population indigenous to the St. Augustine vicinity declined rapidly throughout the 17th century. By 1675, when Gabriel Calderon, Bishop of Cuba, visited Florida, there were only three Christian Indian villages in the vicinity of St. Augustine; Nombre de Dios, Tolomato, and Salamatoto (Wenhold 1936:7-8). The number of inhabitants was given only for Nombre de Dios ("scarcely more than 30"), but it suggests that only about 100 Timucua Indians were left in the area by this time.

Probably the primary factor in this drastic population decline among the Saturiwa was the introduction of European disease. Swanton lists four major epidemics among the Timucua in 1613-1617; 1649-1650; 1670, and 1672 (Swanton 1946:144), although there probably were earlier occurrences. In other areas of the Spanish new world, smallpox, measles, influenza, dysentery, and a reintroduced form of syphilis

were particularly virulent among the Indians. Since they had no resistance to these European diseases, the Indian populations during the early contact period suffered untold numbers of deaths, in some cases even before the Europeans themselves reached the Indians (Dobyns 1963). Since by 1613, Florida had experienced European contact for nearly 100 years, it seems that decimating disease must have taken its toll also in the 16th century, particularly in the vicinity of the most intense contact.

Spanish and Indian relations in the 16th and 17th centuries were built on the mission system. This system was a directed change situation (see Spicer 1961), but of a solely ecclesiastical nature. Within the structure of the system, the link between the European and the Indian was the Franciscan friar, and the areas toward which change was directed were naturally those of the greatest concern to the Friars. These included religious matters, and those areas of culture affecting religion. There were few other types of contact between Indian and Spaniard, since Florida had few resources and farming was not rewarding, so that the *encomienda* system so common to the rest of New Spain was not present.

The acculturation which occurred as a result of the mission system was more apparent in the European culture than in the aboriginal (see Sturtevant 1962:68). Since the colony was poor, and was supported almost totally by the government subsidized situado (Geiger 1940: 7-8), the friars found it most expedient to adapt to the aboriginal methods

of shelter and subsistence.

Missions were probably located in the vicinity of existing Indian villages, and this is supported archeologically by cultural deposits indicating a long prehistoric through historic occupation in many of the East Florida mission sites. Movement of the missions is indicated in the documents, but this may well have been due to the exigencies of Indian agricultural techniques (Sturtevant 1962:62), and later in the mission period to the arrival of the Guale and Yamassee Indians.

The material culture of the Florida Indians appeared to have been very little changed by European contact. The poverty of the colony precluded the replacement of many aboriginal items with European counterparts, and firearms were forbidden to the Florida Indians. The few items which are found at Florida mission sites--ceramics, ornaments, and a few iron tools--suggest that these items were in addition to, rather than a replacement of, aboriginal items (Smith 1956: 44-68).

When Bishop Calderon visited Florida in 1675, he noted that the housing, clothing, and subsistence patterns of the Florida Indians were almost entirely aboriginal (Wenhold 1936).

The conversion of the Florida Indians, particularly the Saturiwa, was the key to much of the European induced change in the culture. Not only did the Franciscans attempt to replace aboriginal ceremonial patterns with Catholicism, but they also, in the process, altered certain aspects of social organization which had important implications for Spanish-Indian acculturation.

It was primarily through conversion that the political struc-

tures of the Eastern Timucua tribes were manipulated, and this in turn had subtle effects on other areas of the social structure. Among the early successful changes made by the Franciscans was the cessation of the traditional pattern of warfare, which was such a noticeable feature of the Eastern Timucua groups at the time of French contact.

By 1598 the chiefs of nearly every major Timucua tribe had come in a group to St. Augustine, to pledge support and obedience to the Spanish crown (Canzo 1598). It seems that from this time, there was no inter-tribal warfare; in fact, Spanish-Indian interaction and communication seems to have replaced interaction on the tribal level to a great extent. The cessation of warfare had an unknown effect on the political authority system of the Timucua, but it is quite possible that the central cohesive emphasis shifted away from the tribal organization, and toward the mission after this time. The reduction of inter-tribal communication is reflected archeologically by the absence of trade material from Northwest and West Florida tribes in the historic levels of Indian sites, and their presence in prehistoric levels, such as the situation found at the Thursby Mound (Moore 1894:64-82), and the Dunn's Creek Mound (Moore 1894:8).

It was also during the early stages of contact that there is evidence of Spanish interference in the inheritance patterns of the Timucua Indians. In 1593 Phillip II of Spain wrote to the governor of Florida: "concerning what you noted about the custom of an Indian

nobleman's death his nephew, the son of his sister, inherits his dignity and his estate. The Christianized Indians complain and do not want to follow this law, but to inherit from their fathers. It would be well to support them in this for now" (Phillip II 1593). Two possible incidents of the support suggested by Phillip are known. The first was the interference in the Guale cacique succession, which was listed as a cause of the Guale rebellion of 1597 (Canzo 1600), and the second was the sudden appearance of Dona Maria Melendez (who prior to this time was the chieftainess of Nombre de Dios) as the chieftainess of all the Indians from Tacatacuru (Cumberland Island) to St. Augustine in 1604 (Serrano y Sanz 1913:171). Maria Melendez is of particular interest in the early history of Florida. While she was chieftainess of Nombre de Dios, she married a Spanish soldier, became ardently pro-Catholic, and apparently brought about almost complete conversion of her subjects (Canzo 1598). For these reasons she was highly praised by the Spanish, and her sudden appearance as the chieftainess of what had formerly been several separate tribes, seems somewhat suspect. This suspicion is supported by the account of Pedro de Ibarra, who described a meeting between Maria Melendez, her subjects, and the Spaniards, which took place on Cumberland Island in 1604 (Serrano y Sanz 1913: 171-172). At this meeting the Spaniards asked Melendez if she had any complaints to make of her subjects, which would require Spanish discipline. Although she did not have any complaints, it seems clear that a good deal of the chieftainess' authority came from Spanish prestige.

The Spanish were extremely supportive of pro-Hispanic cassiques (see Deagan n.d.), and probably manipulated them, and possibly even installed them in order to effect conversion of their subjects. The effects of the switch in political emphasis from the traditional to the Spanish interests presumably played a large part in the weakening of Timucua social structure and world view.

These political changes were brought about by the application of religious sanctions, and were designed to support the system of Catholic conversion. At the same time that these changes were being effected in the aboriginal political structure, more direct and intensive efforts were being aimed at the replacement of aboriginal ceremonial elements with Catholic religious elements (Milanich and Sturtevant 1972). These efforts were quite successful among the Timucua Indians, largely through the manipulation of the cassiques described above. In this way, the Indians of Spanish Florida underwent changes in their religious, ceremonial, political, and social systems, but actually participated very little in direct interaction with the Spaniards. Little Spanish material culture was introduced to them, and no efforts were made to alter the ecological situation or the subsistence practices, so that very little change in these areas of aboriginal life were apparent until the 18th century, when the move to St. Augustine took place.

There were occasional patterns of interaction between Spaniard and Indian which fell outside of the mission structure during the 16th and 17th centuries. The Spanish attitude toward the Indian seemed

somewhat more exploitive during the 16th century than in succeeding centuries. Pedro Menendez de Aviles made an early attempt at directed change when he sent several Indians, including the 10-year old daughter of the King of Tekesta, to Spain in order that they could become Hispanicised and return to teach their tribe members civilization (Menendez 1566). The fate of the project and the Indians is unknown, however, since no further reports of the incident are known.

In 1598 Governor Canzo wrote to the King of Spain about the "war Indians" or "Indian warriors," who were used to attack other Indians that had not subjugated themselves to the crown. In 1597 the war Indians had been sent against the Surruque, who were defeated, and fifty-four Surruque prisoners were brought back to St. Augustine and distributed among the townspeople, presumably as slaves--the women and children to married people and the men to the soldiers (Canzo 1598). This is a very early reference to the presence of Indians in the town itself, although, again, no follow-up report was made. In the same letter, Canzo discussed the tribute expected from the Indians: one arroba of corn from married people, and six macorcas from single people. Apparently the applied anthropological approach, along with slavery and tribute, proved unsuccessful or unprofitable for use with the Florida Indians, since these practices were not continued in the succeeding centuries. It should also be noted that the de Aviles adelantamiento expired with Pedro Menendez' son-in-law, and may have also marked the end of this approach to Indian relations.

Mission activity reached its peak during the 17th century, but occasional, non-religious use was made of the Indians. As early as 1622 Indians from Guale and San Pedro (Cumberland Island) were sent to labor on the forts in St. Augustine; but according to official documents, they were apportioned by their own "micos y cassiques," and they received passage money and gifts (Ramirez 1622).

By the third quarter of the 17th century, the Spanish were either recruiting or impressing Florida Indians to serve in the garrison at St. Augustine. In 1673, some 300 Indians were sent to St. Augustine "to fill the gaps in the infantry," including 200 Apalachee, 50-55 Timucua, and 45-50 Guale Indians (de la Guerra 1673).

Further evidence of the non-religious exploitation of the Florida Indians is provided by the 1656 letter of Manuel, Chief of Asile, which outlined some of the Indian grievances which led to the Timucua rebellion of 1656 (Manuel 1656; Milanich n.d.). Among these grievances it was reported that the Indians were forced to labor on the Spanish cattle ranches and plantations without compensation. Little is known of cattle raising in colonial Florida during the 17th century. Believed to have been established ca. 1655 (Arnade 1965:6), cattle farming reached a peak in 1700, when the first taxes were levied on the ranches, and at that time there were 25 ranches in Timucua territory (Ibid.:8). The extent to which Indian labor was employed on the ranches is not known, although garrison soldiers were sent to work on the ranches in the early 18th century (Ibid.:9). The use of Indians on the cattle ranches was

probably quite limited, and like presidio labor and service in the garrison, reached only a very small proportion of the Indian population, although these Indians must have learned some Spanish skills of ranching and building.

These instances of non-religious interaction between Spaniard and Indian on the frontier were peripheral to the basic pattern of mission acculturation in the 17th century. It was the Spanish-Indian interaction within the colonial town that had important implications for the later, intensive Spanish-Indian interaction and mestizaje.

One of the most pervasive, and least known patterns of pre-18th century Spanish-Indian interaction in St. Augustine was the formation of alliances between Indian women and Spanish men. Very little is known of the proportion, permanency, and status of Spanish women residing in St. Augustine. The original party accompanying Menendez on his initial arrival in Florida contained 800 people; 500 soldiers, 200 sailors and 100 "useless" people (Tebeau 1971:34). Since it was also reported that 100 of Menendez' men were married, the 100 "useless" people may have been wives and children of these men. It should be noted, however, that official permission was not granted until 1579 for the wives of men stationed in Florida to join their husbands (Chate-laine 1941:43), although there is certainly no record of a major immigration of Spanish women to Florida at or after this time.

Although the party accompanying Menendez was intended primarily as a military expedition, it did comprise the original European

pioneer population of Florida, and this population seems to have dropped considerably in the years following the founding of St. Augustine. Little immigration to the poverty-stricken Florida colony occurred during the Spanish period, since there was no economic incentive in the colony, and the nature of the situado--dependent subsistence base must have limited the number of residents the colony could support. There are occasional records of women entering the Florida colony; for example, in 1566 14 women arrived with the relief party of Arcineagas (Chatelaine 1941:43). By 1578 there were only 186 men in the town, and a request for 300 men, but only six women was made by Menendez (Dunkle 1958:5). This seems to imply that soldiers of the garrison were finding mates among the Indian women of the area quite early in the Spanish period. What proportion of these alliances were marriages is unknown, but an untitled document, tentatively dated 1577, lists 13 married men "besides the soldiers, some of whom are married"; rather a sharp reduction from the 100 married men of 12 years before. By the turn of the 17th century, there were 57 married couples and 107 children in St. Augustine (Arnade 1959:9), and it was just prior to this time that Governor Canzo reported a considerable number of illegitimate children in the town (Canzo 1598).

Specific instances of recorded, Indian-Spanish marriages during this period, and throughout the 17th century, are rare; consisting for the most part of marriages notable enough to receive mention in the official documents. These early inter-racial marriages revealed

that an alliance with a Spaniard was a desirable accomplishment, since the nobility of the Florida Indian groups were among the first to enter into such marriages. Perhaps the earliest record of a Spanish-Indian marriage was that of Pedro Menendez de Aviles himself in 1569 to the sister of Carlos, chief of the Calusa (Zubillaga 1946:610). While this was almost certainly a marriage of political expediency (since Menendez already had a Spanish wife), it serves to illustrate the positive Indian attitude toward such marriages. Another early marriage of an Indian woman to a Spaniard was that of Luisa Menendez and Juan Rivas, who met and married while Rivas was on the Pardo expedition of 1567 (Arnade 1959:38). Rivas and his wife returned to live in St. Augustine, where Rivas was called upon 35 years later as reliable and expert witness at the hearings to determine the fate of Florida in 1602 (Arnade 1959:38). A slightly later mixed marriage was that of Maria Melendez, chieftainess of Nombre de Dios, to the Spanish soldier Clemente Vernal. Dona Melendez was pro-Catholic and Spanish, ruling her subjects jointly with Vernal (Canzo 1598), and from this marriage there were several mestizo children (Arnade 1959:26).

Intermarriage between Indian and Spaniard almost certainly occurred with greater frequency in colonial St. Augustine than is indicated documentarily. It was, nevertheless, on a fairly small scale during the 16th and 17th centuries, if only because of the small and steadily declining Indian population in the St. Augustine area.

The Guale Period: Post-1680

This situation began to change, however, when the Guale Indians of the Georgia coast began to move into the St. Augustine area, swelling the Indian population. There were four Spanish missions left in Guale in 1680, despite the recurrent attacks of Yuchi Indians which had been taking place for 25 years (Swanton 1946:135). These raids may have been at least partly British-inspired slave raids, and the founding of Charles Town in 1670 increased the tempo of Yuchi activity. Thus began a series of events which were to result in the Indian depopulation of Florida, and the repopulation, on a smaller scale, of St. Augustine.

By 1675, when Calderon visited Florida, the coastal area north of the St. Johns River (Amelia Island, Cumberland Island) was already inhabited by infidel Yamassee Indians (Salazar 1675), and in 1680, several Guale chiefs asked to be relocated in Spanish territory (Swanton 1946:136), with the result that a large body of Guale moved into Florida. As early as 1658, the Guale mission of Tolomato was relocated at St. Augustine (Phillipe IV 1660). Items of material culture and settlement patterns of the Guale rapidly replaced indigenous Timucua elements in Florida; clearly demonstrated archeologically at several Florida sites occupied successively by Timucua and Guale Indians (San Juan del Puerto (J. MacMurray 1973), Wright's Landing (Goggin 1953:6), Rollestown (Goggin 1953:5), Harrison Homestead (Hemmings and Deagan 1973), and Fort Pupo (Goggin 1951)).

This gradual increase in population continued from 1680 to

1700, when a major increase in the Indian population of St. Augustine occurred, along with a concomitant shift in the Spanish attitude toward Indians. After the raids of Col. James Moore and his force of Carolinians, Creeks, and Yamassee Indians, the Florida mission system was destroyed, along with the cattle ranches and a large proportion of the Indian population (Boyd, Smith and Griffin 1952).

Now with Britain a direct threat to Spain's tentative hold on Florida, and also to the safety of the colony at St. Augustine, the Spanish interest in the Indians shifted from being strictly religious and somewhat economic, to being quite militaristic, quite economic, and somewhat religious. Indian allies were sought not only for aid in the struggle to maintain control of Florida, but also to act as a defense line in case of a British attack on St. Augustine; a possibility that became a reality several times in the 18th century (see Tepaske 1969:193-229).

The Spanish population of St. Augustine also depended in other ways upon the greatly increased Indian population of the area. Moore's raids had destroyed the cattle ranches upon which St. Augustine depended for food, and thus the Indian cornfields which were cultivated on the periphery of the town were an important supplementary food source (Chate-laine 1941:map 10; Solana 1760). The Indians of St. Augustine probably also provided a labor pool for the rebuilding of the town after the siege; and possibly also as a source of local craft industries such as pottery or weaving.

The rapid increase in the Indian population of the St. Augustine

area is reflected in documentary data from the period. When Calderon visited the town in 1675 he noted a very sparse Indian population, but by 1703, at least eight villages of Indians, including Timucua, Apalachee, Guale, and remnants of South Florida tribes, had been established near the town. These were Nombre de Dios Chiquito, Timucua, Tama, Jororo, Costa Tolomato el Nuevo, Nombre de Dios, and Macariz (Valdes 1729), some of them obviously named after the Indian groups which inhabited them. By 1714 the Indian population of St. Augustine had grown to 401 (Phillipe V 1714); in 1726 it was 1101 (Valdes 1729), and in 1738 there were 1350 Indians living in the St. Augustine area (Benavides 1738). The 1726 account of Indians in the area lists 10 villages of heterogeneous tribal affiliation and language, including Yamassee, Chiluca, Guale, Timucua, Pojois, Apalachee, Costa, and Jororo Indians (Valdes 1729). Some of the villages were as far away from the fort as 12 leagues during the first quarter of the 18th century, but increasing raids by the "Chiscas and Chichumecos" forced most of the pueblos to within a gunshot of the fort, and many of the Indians into the Castillo to sleep at night (Solana 1760).

Most of the Indians lived in the mission villages, tilled the soil, and made occasional forays into the countryside to hunt (Doctrineros 1728), having little direct contact with the Spanish population of St. Augustine. Of the 1350 Indians in the area in 1738, only 24 of them (ten "houses") lived in the town (Benavides 1738). One area of Spanish-Indian interaction was increasing rapidly in tempo, however, and this

was the formation of liaisons between Indian women and Spanish men.

These liaisons were a more common feature of the 18th century than of the preceding centuries, since the incidence of such marriages increases greatly in the parish records and other documentary sources hint at the situation. Early in the century, the issue was important enough to be discussed in a letter to the crown. Governor Corcoles y Martinez reported that the friars were angry about the marriage of garrison soldiers to Indians or mixed Indians by the garrison pastor. They said "If a soldier or anyone wishes to marry an Indian or mixed Indian they must do so in the parish and church to which the Indian belongs" (Brooks 1909:167-8).

Complaints by members of the religious orders were made throughout the 18th century about the immoral activities, "abuses," "vices," and "evils" of St. Augustine town life (Buenaventura 1735, 1736; Solana 1758), and it was reported in 1758 that the soldiers did not quarter in the presidio, but lived instead in the town "where illicit relationships take place" (Solana 1758). Activities such as these probably accounted for a great deal of mestizaje not recorded in the parish documents.

Mestizaje in St. Augustine

The process of mestizaje began in the new world from the time of the first European contact. As early as 1501 the forceful concubinage of Indian women was recognized as a problem in the New World, and the royal instructions to Governor Ovando of Santo Domingo in 1501

included the decree that Indian women should not be retained against their wishes. It was also stated that if Spaniards wished to marry Indians, "this had to be done voluntarily on both sides and not forcibly" (Morner 1967:37). Marriages between the daughters of Indian cassiques and Spaniards were also encouraged, for by Spanish reasoning (and misunderstanding of matrilineal inheritance systems) "in that way all of the cassiques would soon be Spaniards" (Ibid.). This was probably similar to the attitudes and approach held by the European conquerors of Florida.

Magnus Morner's study of race mixture in Latin America (1970) points out that the earliest generations of mestizos were generally associated with, and assimilated into the paternal group, and less frequently into the maternal group. The formation of a distinctive, marginal mestizo population did not occur until mestizaje began to take place on a greater scale, when mestizos began to identify with each other rather than with a parental group (p. 29).

This also would have been the case in 18th century St. Augustine, had the 18th century Spanish population remained in the town. 16th century mestizaje was largely understated and connected with aboriginal nobility, and while there was a slight increase in the incidence of mestizaje during the 17th century, it was not recognized as a social issue or problem. It was not until the 18th century that intermarriage and mestizaje occurred to a noticeable or significant extent in Florida.

The parish records of the Cathedral of St. Augustine (1574-

1763) list occasional births resulting from mixed Spanish-Indian marriages in the 16th and 17th centuries, but it was not until the Book of the Pardos was started in 1735 that Indian-Spanish marriages and births were clearly stated. It should also be remembered that mixed marriages were encouraged to be performed in the parish of the Indian bride (Corcoles y Martinez 1704; Brooks 1909) thus revealing the Parish records as an unreliable index to mixed marriages and births before the Book of the Pardos (which contained Negro, Indian, and mixed blood statistics) was established. The proportion of the St. Augustine population with mixed Indian-Spanish blood by 1700 was probably somewhat greater than that suggested by the parish records. Possibly the earliest mestizos were encouraged to identify with the Indian parent, as suggested by their exclusion from the parish records, but by the second or third generation of those living in St. Augustine, integration of this small segment of the population into the town life would have taken place, along with their identification as criollo, rather than mestizo. During the 10-year period from 1725 to 1735 only two births out of 235 recorded births were listed as having an Indian or Mestizo parent (1%), which seems quite low, even considering the normal pattern of relegation to the Indian doctrina parish of mixed blood records. By the 10-year period from 1700 to 1710, 12 out of 386 births (3%) were listed as racially mixed, and by 1735 the incidence was high enough to warrant their inclusion in the separate Book of the Pardos.

It was during the 18th century that mestizaje took place at a

noticeably increased rate in St. Augustine. Between the years 1735 and 1750 there were 306 marriages performed in the parish church (St. Augustine Historical Society n.d.). Of these, 55 (18%) were between blacks or mulattos; 217 (71%) were between Spaniards or white creoles, and 34 (11%) were between mestizos or Indians, and Spaniards or creoles.

During the same period (1735-1750), 1,423 baptisms were recorded. These included 411 (27%) Black or mulatto births; 976 (70%) white births and 36 (3%) mixed Indian-White births. It is indicated that during this 15-year period, at the height of Spanish-Indian interaction, there were roughly five births recorded to every marriage of Blacks; six births recorded for every white marriage, and only one birth for every mixed marriage recorded in the city. Since illegitimate births and stillbirths were recorded in the baptismal records, a distortion of the births per marriage due to a higher rate of illegitimacy or infant mortality for a particular racial group may be ruled out.

Either the mixed-blood birth rate was actually much lower than that of Whites or Blacks, or other cultural factors distorted the documentary record. Since it is known that earlier in the century attempts were made to relegate Indian-Spanish marriages to the Indian bride's parish, the same attempt may have been made for mixed blood births. Although the trend indicated in the documents seems to imply that a greater proportion of mixed marriages--particularly those involving garrison members--were being performed in the town parish, the birth

of a child was in the 18th century a non-institutionalized area of female culture, and would be dealt with in a manner culturally familiar to the mother. Many such births may have taken place in the woman's doctrina home.

During the 15-year period between 1735 and 1750, only two instances of Indian-Negro marriage were recorded, and both of these involved a mulatto male and a mestizo female. In no instance was a match between an Indian male and a white female noted. Although we know that in 1729 there were a number of tribal groups in the St. Augustine area, all of the mestizas or Indians in mixed matches, whose place of origin was given, were Guale or Yamassee Indians, with the exception of two Apalachee women. The Jororos were in the village of Jororo, the Costas were in the village of Costa, the Timucua and the Apalachee were in the village at Mose; leaving Palicia, La Punta, Tolomato, Nombre de Dios and Macariz for the Guale and Yamassee (Valdes 1729). In the marriage records, nine women were from Palicia, four were from Tolomato, two were from La Punta, and one was "of Iguala." The Guale and Yamassee had been in St. Augustine since 1680, and their villages were almost within the town (Valdes 1729), so that their contact with the garrison and the townspeople was greater both in duration and intensity than that of the other Indian tribes. This is also reflected in the predominantly Guale ceramics which are found on 18th century St. Augustine sites.

The social position and Spanish attitude toward mestizos and

acculturated Indians in St. Augustine is particularly obscure. Occasional documentary references hint that mestizos held a marginal social position, and were recognized as a distinct, but separate population element.

By the early 18th century this becomes apparent, as mestizos become more integrated as a group into the town life. A recurrent ecclesiastical and judicial concern was the distinction between mestizos or Indians who lived in the town, and those who lived in the Indian villages. Friars in the Indian doctrinas felt that mestizos, even those living within the city, should come under the religious and civil jurisdiction of the Indian doctrina parishes. The secular priests in the town, however, seemed to feel that mestizos and town-dwelling Indians should come under the same jurisdiction as the Florida Criollos (Cerde 1701). By this time, then, the mestizos were a recognizable, albeit marginal group in colonial St. Augustine.

The documentary indications of the attitude toward mestizos are generally negative. One of the earliest comments about mestizos was that of Governor Zuniga who, when reviewing the situation of the population after the 1702 siege, stated that there were "some Negroes, Indians, Mullatos, Mestizos, and other dastardly persons" in St. Augustine (Zuniga 1702). This is revealing of subtle racist attitudes which were probably directed toward mixed-bloods in 18th century St. Augustine.

At least twice during the 17th century, companies of Mexican

mestizo soldiers were sent to St. Augustine to supplement the inadequate St. Augustine garrison. In 1662, the mestizos were described as "useless" and "cowardly" (Ponce de Leon 1664), and again in similar terms in 1669 (Arana 1971:55). These companies were discharged, and presumably returned to Mexico without significantly influencing St. Augustine culture.

These suggestions of an unfavorable attitude toward the mestizos of colonial St. Augustine, coupled with their segregation in church records to the Book of the Pardos, or even further, to the Indian Doctrina parishes, suggests their social identification with Indians rather than criollos. Nothing is known of the Indian attitude toward mixed blood people.

There are a number of problems involved in the study of mestizo social position for which the parish records can be a useful source of information. One of these is the settlement pattern of the mestizo families within the town. The Puente map of 1763 provides the names and locations of all heads-of-families residing in St. Augustine, and the correlation of racial identification in the parish records with the Puente locations in the town should show whether mestizos were clustered in certain areas of the city or were distributed randomly. Another subject of interest is the marriage partners of mestizos, particularly second or third generation mestizos. During the 1735-1750 time period, 21 Indian women and seven mestizo women were recorded in the marriage records with their husbands' place of origin. Of the 21 Indian women,

11 married Spaniards (two of which were from New Spain), two married criollos, six married mestizos and one married an Indian. Roughly the same proportions held for the mestizo women: five married Spaniards, one married a criollo and one married an Indian. The data from this short period indicate that the marriages between Indians or mestizos and non-Indians usually involved a Spanish garrison soldier, while marriages with criollos were relatively uncommon, perhaps due to prejudices on the part of the resident criollo population.

Social status of mestizos, or at least social aspirations, could also be gauged by a determination of the godparents chosen, or willing to act for, mestizo children. This was an important social index in Spain, but most particularly in New Spain (Foster 1960:122-123). The surname taken by mestizo children is also a significant focus of research in the parish records, since superficial observation shows that many take the mother's (Indian or mestizo's) surname rather than that of the Hispanic father. In this way hypotheses about the degree of aboriginal inheritance and social organization which are retained in an emerging mestizo population may be tested. The correlation of changes in these documentary aspects of social position through time, with changes in the population composition of the town is also indicated in a survey of the parish records. Such a survey, encompassing all of these aspects, is a project, the nature and scope of which would provide appropriate material for a book in itself.

The economic position of mestizos in St. Augustine, as well

as their lifestyle in relation to the other population elements in the town, and the processes by which mestizaje and assimilation into Hispanic-American culture took place, can all be illuminated by problem-oriented archeology in St. Augustine. This approach, carried out within the framework of a known mestizo setting, has revealed specific details of mestizo life, and acts as a controlled test of hypotheses relating to the problems outlined in this chapter.

Such a setting, revealed by research in the parish records of St. Augustine, is the home and family of Maria de la Cruz. Maria de la Cruz was the daughter of Indian parents who lived at Nombre de Dios, a Guale mission village on the periphery of St. Augustine. Since Maria's birth was not recorded in the parish records, she was probably born at Nombre de Dios, and in 1728 she married Joseph Gallardos, a Spanish soldier from Santiago. Maria and Joseph had three children whose births are recorded in the parish records: Maria, born in 1730, Nicolasa, born in 1740, and Joseph, born in 1745. Maria married a Spaniard named Joseph Morales in 1745, the same year that her brother was born. By the time of the Spanish departure in 1763, Maria and Joseph (the elders) were gone, for a lot containing two stone houses was listed on the Puente map as belonging to "the heirs of Maria de la Cruz," these presumably being Maria, Nicolasa, and Joseph. This was a substantial property by any standards in St. Augustine, as was the property next door. On it stood a tabby house owned by Clemente Hilario, a mestizo who was married to an Indian woman.

The existence of such homes belonging to mestizos indicate

that they were not entirely on the fringe of St. Augustine economic life; in fact, they were fairly well-to-do by material standards. The nature of this material well-being, and its role in revealing the degree of integration of the mestizo or Indian into a Hispanic cultural setting has been the task of archeology, carried out at the site of Maria de la Cruz's home.

CHAPTER II

18TH CENTURY ACCULTURATION: A PROCESSUAL HYPOTHESIS

The social setting in which Maria de la Cruz lived was unlike that of Indian women in most other parts of New Spain. The two centuries of events and patterns of interaction outlined in the preceding chapter, which led to the participation of Maria de la Cruz in Florida mestizaje, were unique to the New World colonial experience.

By no stretch of the imagination could Florida today be included in the Hispanic American culture area (Foster 1960:2). Hispanic American culture is the result of the Spanish settlement and occupation of certain New World areas, including Central America, South America and the Carriibbean. This cultural expression can be seen as the result of interaction and mutual influence between the Hispanic and aboriginal cultures in the areas of contact. Foster's 1960 study of this situation in Mexico produced important insights into the Spanish-Indian acculturative process, which when applied to Spanish Florida, help clarify the unique situation there.

A basic concept in Foster's explanatory scheme is that differential factors in the presentation and acceptance of cultural elements are operating in both cultures. He characterizes the donor culture (which in this case is the Spanish culture) as artificial, standardized,

simplified or ideal, in that it is at least partially consciously created and designed to cope with recognized problems" (Foster 1960:11). In cases where little or no political or military control is exercised over the recipient culture, Foster refers to the donor culture as a "contact culture" (Ibid.). A conquest or contact culture is a stripped-down version of the total cultural repertoire of the donor, designed to cope most effectively with the new environment. This screened version of the donor culture is screened again by the recipient culture, which selects some elements of the contact culture, and rejects others (Ibid.:12).

Foster pointed out that socio-psychological mechanisms, the nature of the recipient material culture, and official policies of the donor culture all affected the formation of Hispanic American culture, and he defined three basic processes at work in the acceptance or rejection of donor cultural elements. In the area of material culture, Spanish items were accepted most readily where there were no satisfactory native counterparts, and they were rejected where there was a satisfactory native counterpart (such as food, or life cycle ceremonials) (p. 228). Also in the area of material culture, Spanish forms were readily accepted when the recipient culture counterpart was less efficient (such as in agricultural techniques). In the area of folk culture (dietary preferences, folklore, superstition, music) however, Spanish elements found themselves in competition with native analogues; and the acceptance or rejection of such elements was largely the result of socio-psychological mechanisms on the part of individuals, and is much more

difficult to describe (p. 229).

The ultimate result of these selection processes in both the donor and the recipient cultures over time, is referred to by Foster as "cultural crystallization." After a period of fluid cultural conditions, and receptivity to donor cultural elements, the recipient and donor cultures internalize the new, borrowed forms, and become resistant to further donor cultural influence (Ibid.:232). That is, the new, Hispanic-American culture crystallized.

The analysis of Spanish Florida within such a framework reveals a number of differences from Central America, on which Foster's study was based. Throughout the 16th and 17th centuries, when the developments leading to cultural crystallization should have been taking place (in Foster's scheme), the interaction between the donor (Spanish) and recipient (Indian) cultures was extremely limited and strictly controlled by the mission system. This was a contact culture, presented to the Florida Indians almost entirely in terms of mission Catholicism. During this time, mestizaje was taking place in St. Augustine, but at a barely noticeable rate, which did not significantly affect Indian-Spanish cultural exchange.

Another important difference between Central America and Florida was in the Indian population with which the Spanish culture came in contact. The Timucua Indians were semi-sedentary, part-time horticulturalists with a tribal organization. The Indian cultures of Central America, however, by the time of Spanish contact, had culminated in a

state level of organization, with dense populations, urban centers, elaborate political and ceremonial systems, and a well-established agricultural and trade-based economy. While certainly not all Indian groups in New Spain possessed these cultural features, the participation of cultures which did, had an important effect on the pattern and results of Indian-Spanish interaction and acculturation.

With the beginning of the 18th century in Florida, and the changes in Indian-Spanish interaction at this time (outlined in the preceding chapter), the processes of donor presentation and recipient selection which led in Central America to cultural crystallization began to take place. This lasted for a scant 63 years before the Spaniards and the Indians left Florida, and the embryonic Hispanic-American culture in Florida was brought to an end.

The donor culture in 18th century St. Augustine can be characterized as an extremely reduced version of Spanish culture, consisting mainly of male, military and frontier elements. Since the most effective, and prevalent, form of interaction with the aboriginal population was through marriage with Indian women, the recipient culture can be viewed as a reduced version of Indian culture, consisting of female, domestic, and folk-culture elements.

This was a contact, rather than a conquest culture, and the designation of "donor" and "recipient" to the respective cultures involved is somewhat misleading for 18th century St. Augustine. Neither the Spanish population nor the Indian population at that time was indigenous

to the area, and the process of acculturation was mutual. Although the Spanish culture is referred to as the "donor," and the Indian culture as the "recipient" here, each of these cultures acted as donor and as recipient at various times.

It should be noted at this point that there was a certain form of cultural crystallization that occurred in colonial St. Augustine, but not of the variety described by Foster, which involves a native recipient and a European donor. This was the *criollo* culture of St. Augustine, about which very little is known. The *criollo* culture was the result of Spanish cultural elements affected by the environmental limitations of Florida, and the peculiar nature of situado-based subsistence. Interaction and exchange with Florida's native cultures was apparently not a significant factor in the formation of *criollo* culture, but it was rather the result of adaptation by Spanish colonial economic, political, and social institutions to the physical environment in which they found themselves. Manifestations of this *criollo* culture include the architectural styles of St. Augustine, including the "St. Augustine plan" homes (Manucy 1962; Arnade 1961); the subsistence on imported food, with native sources used mainly as a supplement, and a general impression of transiency and dissatisfaction in the colonial documents. The analysis of *criollo* culture, however, is outside the scope of this study, and is in itself an appropriate topic for an extensive study.

The nature of Indian-Spanish cultural exchange in 18th century St. Augustine, however, can be seen as part of the process outlined by

Foster. Although the ultimate result of these processes in New Spain was the crystallization of Hispanic-American culture, this did not occur in Spanish Florida for the reasons suggested above.

Given the nature of the donor and recipient cultures, and the important factor of the female link between them, a hypothesis can be formulated to account for the particular pattern of acculturation and mes-
tizaje in colonial St. Augustine:

"Acculturation in 18th century St. Augustine was effected largely by Indian women in Spanish or mestizo household units within a predominantly male oriented (military) cultural milieu."

This hypothesis has a number of implications which are archeologically testable:

1. Acculturation would be evident primarily in Indian women's activities affecting Spanish cultural features. This would be archeologically discernible in the areas of:

- A. Food preparation techniques
- B. Food preparation equipment and location of food preparation materials
- C. Collectable food resources locally available
- D. Child-care related activities

Material correlates of these activities would be expected to exhibit primarily Indian elements, with some Spanish influence. These are areas of female Indian culture which affect the daily elements of male (Spanish) culture, and are therefore influenced by male tastes and peripheral

involvement. They would, however, be expected to reveal only minor European influences, due to the fact that the donor culture in St. Augustine was primarily male, and would probably not include Spanish versions of these activities.

Native aboriginal food preparation techniques included roasting, stone boiling, parching grain and vegetables, preparation of porridges and stews, barbecuing on frames, seed and corn grinding, and bread baking in ashes (Swanton 1946:51-72). Native food preparation equipment, archeologically recoverable, would include earthenware pots, fire pits, boiling stones, and grinding stones of native materials. It would be expected that some evidence of these activities and equipment items would be recovered, possibly with some modification demanded by Spanish tastes.

Both food preparation techniques and equipment are largely dependent upon the available food resources. Food was a topic of constant concern in colonial St. Augustine. Moore's raids in 1702 and 1704 had destroyed the cattle ranches upon which the town depended for fresh meat (Franciscans 1722). Although cornfields were reportedly cultivated on the edge of the town in the early part of the 18th century, by the term of Governor Corcoles y Martinez (1706-1716) it was said that predatory Northern Indians aborted any attempts at farming other than a few small plots beneath the Castillo walls (Tepaske 1964:87). Enemy Indians also prevented hunting and fishing outside the town confines.

Many homes in St. Augustine had gardens in which fruit and

vegetables for household consumption were grown. Vegetables grown in St. Augustine gardens in 1600, and probably also in the succeeding centuries, included corn, pumpkins, beans, cucumbers, greens, lettuce, radishes, and sweet potatoes (Arnade 1959:27). De Brahm noted that in 1763, the Spanish gardens were well stocked with fruit trees, including figs, guavas, plantains, pomegranates, lemons, limes, citron, oranges, and bergamot (Fairbanks 1881:89).

The base and mainstay of St. Augustine subsistence, however, was the situado. This yearly subsidy was sent to the Florida colony from New Spain to supply the garrison and town with food, clothing, money, and all other material goods needed or wanted for survival. Except for the few alternate and supplemental food sources discussed above, the people of St. Augustine were totally dependent upon the subsidy. For this reason the erratic and undependable nature of the situado was especially tragic. When the situado did arrive, and it often did not, the months of sitting in port had frequently rotted the meat and rendered flour wormy and moldy. Exorbitant prices charged by the merchants of New Spain to the helpless Florida representative and frequent interference with the cargo ships by foreign corsairs also increased the plight of those trying to survive on the situado. In 1739, 1740, and 1741, the situado did not arrive at all because of the ensuing war with the English (the war of Jenkins Ear), and then, as in 1712 when the situado ship was seized by the British, the inhabitants of St. Augustine were reduced to eating cats, dogs, rats, and horses (Tepaske 1964:83).

By the middle of the 18th century the situado was so insufficient that illicit trade with the British colonies was flourishing. The heaviest trade was carried out with Charleston, and between 1716 and 1763 frequent ships carrying cargoes of pork, beef, rum, flour, cheese, dry goods, herring, butter, bread, bacon, knives, cloth, corn, pipes, vinegar, nails, tallow, "european goods," hoes, axes, lard, pine board, bottled beer, grindstones, and beeswax traded in St. Augustine (Harmon 1969: 83-88). Ships from New York also arrived in St. Augustine to trade; containing wood, skins, wine, rum, and horses. (Ibid.:89). The Virginia colony also took part in the illicit trade, sending beef, lard, malt, iron pots, pork, flour, and 3000 Staves and shingles to St. Augustine (Ibid.:91). In exchange for these goods, the Florida traders provided oranges, skins, lumber, and "Spanish Sugar" (Ibid.).

Even with gardening and sporadic trade with the British, getting enough food to subsist on was a major concern of Spaniard, Indian, and mestizo alike. Therefore those households that had access to, or special knowledge of local food resources, would be at an advantage. Such households would include those with an Indian member, such as the de la Cruz-Gallardos family, and it would be expected that native food sources and preparation evidence would be present at the site of their homes. Although the donor contact culture in St. Augustine did offer items of food and food preparation in the situado, these items in this case were not more easily accessible, or more efficient than native forms, and would therefore not be expected to replace the recipient cultural forms, although they would

probably act as a supplement, especially for prestige items.

Child care was another area of female culture expected to show evidence of acculturation. Although primarily a focus of the Indian woman, this activity did have a direct link with the male (Spanish) member of the household. Material correlates of child care activities, such as games and toys, would therefore be expected to be primarily aboriginal, but not without some Spanish influence.

2. Acculturation was less evident in male activities, which would be primarily Spanish. This would be archeologically discernible in the areas of:

- A. House style
- B. House construction techniques
- C. Spatial relationships among house lot elements
- D. Military-political affairs

These are areas of culture that would not be adopted by the aboriginal recipient culture, which was primarily female. Also, since the link between the Spanish contact culture and the aboriginal Florida culture was the Indian woman, the recipient aboriginal culture's repertoire which was made available to the Spanish would not include these elements.

Typically Spanish homes in St. Augustine were single or double-storied, with two or three rooms to a floor. Most had a wall surrounding the house and yard, and were constructed of native materials--coquina, wood, or tabby (Manucy 1962:10-12). The differences observed in St. Augustine Spanish architecture from the architecture of Spain are due to

the modifications imposed by the Florida environment, rather than to aboriginal influence.

Within the garden wall, Spanish homes in St. Augustine included the house itself, a courtyard area, one or more wells (usually in the courtyard) and one or more outbuildings, which might be a kitchen, out-house, fowl house, laundry, or storage shed (Manucy 1962:127). In a mixed Spanish-Indian household in St. Augustine, it would be expected that archeological evidence of this pattern would be recovered.

Evidence of military-political activity, archeologically recoverable, would include Spanish ammunition and weaponry, with little evidence of aboriginal influence expected.

3. Crafts of women would be primarily aboriginal.

These crafts would include activities such as pottery making, weaving, sewing, and basketry, which would not be part of the male-oriented Spanish contact culture in St. Augustine. Craft activities are also restricted by available raw materials, which in 18th century Florida included only those native to the area, and which were already an established part of the native Florida craft repertoire.

4. Crafts of men would show evidence of Spanish-Indian admixture.

Male crafts, including flintworking, bonework, woodworking, fishing, trapping, and hunting; would be predominantly Spanish where the Spanish form was more efficient than its native counterpart (such as fish hooks and nets). Due to the raw materials available, and the restrictions placed on Spanish craft techniques (particularly hunting, fishing,

and trapping) by the exigencies of the Florida environment, however, Spanish techniques and equipment would be modified by the adoption of those aboriginal techniques which were already well-adapted to the environment. It would be expected that this would be archeologically most apparent in trapping activities, and in the raw materials used for craft activities.

5. Socio-technic items would be largely Spanish as more prestigious.

Socio-technic items, as defined by Lewis Binford (1962:95), are those artifacts which serve to function within or define a certain specific social sub-system within a culture. In a mixed Spanish-Indian situation, socio-technic items of European origin, which identified the individual as "Hispanic" would be selected over aboriginal items because of the greater prestige associated with the European in a mestizo milieu. This selection process would be comparable to the third process hypothesized by Foster (1960:229); that of individual socio-psychological factors determining selection of or rejection of European elements.

Archeological evidence of socio-technic items would include those artifacts which contributed to the public image of an individual or family, such as dress, cosmetics, ornaments, tableware, and even the house itself.

The appropriateness of the above hypothesis, and the explanatory strength of Foster's model of the contact culture, could be, and have been, tested by controlled excavation in St. Augustine, Florida, the locus of 18th century Spanish-Indian interaction.

CHAPTER III

TESTING THE HYPOTHESIS

Documentary History of the Site

In order to test the hypothesis outlined in the preceding chapter, it was necessary to locate a site of known Spanish-Indian occupation. SA-16-23 was such a site, known documentarily to have been occupied by a mestizo household in the 18th century (see Chapter I), and also partially excavated by a 1972 University of Florida field party.

Located at 17 Spanish Street in St. Augustine, the site lies in what was the northwest portion of the colonial fortified city; Quadrant "C" (Figure 1). Today the site is designated as Block 16, Lot 23; a block which in colonial times was occupied by a number of mestizo families. Although it is now an empty lot, the site has had nearly continuous occupation from the first Spanish period to the present, with much building and rebuilding.

Virtually nothing is known of the lot through documents prior to 1763, when it was depicted on the Puente map as the location of two stone buildings belonging to the heirs of Maria de la Cruz (see Chapter I) (Puente 1763).

When Col. James Moore attacked St. Augustine in 1702, he found few stone structures there; only the fort and parts of three public buildings

(Manucy 1962:21). The vast majority of the town buildings were of wood, and were destroyed in the raid of 1702, and certainly any house which stood on the de la Cruz lot were destroyed--possibly even by the Spaniards themselves. The lot quite likely fell within the "gunshot's" radius around the fort, in which all structures were razed so that they could not be used by the British (Ibid.: 23).

The government-subsidized rebuilding of St. Augustine, which began after 1703, and was well underway by 1715, increased the number of masonry dwellings. By 1759, 23 out of 303 structures were built of stone (Solana 1760), one or more of these undoubtedly the de la Cruz dwellings, which were built of coquina stone on tabby foundations.

The Jeffries map, published in 1762 (Jeffries 1762), suggests an even earlier date for the de la Cruz dwellings. This map was made not from firsthand observation, but "chiefly from original drawings taken from the Spanish in the last war" (Ibid.). The last war before 1762, referred to by Jeffries, was probably Oglethorpe's siege of St. Augustine in 1740, during the war of Jenkins Ear; and thus the map can be tentatively dated ca. 1740. On the Jeffries Map the de la Cruz houses, as well as outbuildings associated with them, are depicted (Figure 2).

The first recorded mention of the lot ownership, however, was in 1763, when the engineer Juan Elixio Puente made an assessment of Spanish property at the time of the British takeover (Puente 1763) (Figure 1). Puente listed what is now SA-16-23 as belonging to the heirs of Maria de la Cruz, undoubtedly Joseph, Maria, and Nicolasa; and depicted two stone houses on the lot.

With the Spanish departure from St. Augustine, the de la Cruz heirs sold their property to the Englishman, Samuel Pyles (Historic St. Augustine Preservation Board), upon whose death in 1765 the property was sold to Jesse Fish (East Florida Papers B. 357:2). (It was this transaction, which retained the wording from the original de la Cruz-Pyles deed naming Maria de la Cruz as "la Yndia").

The Moncreif map of 1765 depicts the two stone buildings on the lot, and also lists them as the property of Mr. Pyles. This was probably drawn before the death of Pyles.

Fish retained the property until the British departed from St. Augustine in 1784, and the land reverted to the crown (Roque 1788). It was not, however, unoccupied, for this seemed to be a period of squatting privilege, or tacit privilege for those who built on crown land. By the time the Roque map of 1788 was made, the Minorcan family of Bartolome Usina had built a timber and wood-frame house on the lot and was living there. Neither the Roque map of 1788 or the Berrio Map of 1791 shows the stone houses originally belonging to the de la Cruz family, so it may be assumed that by 1788, the tabby and coquina houses were gone and the wooden house of Usina stood on the lot. Archeological evidence supporting this was recovered during the 1972 excavation of the south house: a distinctive post and wall trench for a wooden house was found, cutting through the tabby foundation of the earlier house. Since the contents of the trench included Creamware (1762-1820) and Wheildon Ware (1740-1770) (Noel-Hume 1970:123-126) this was a late 18th century construction, and most probably Bartolome Usina's dwelling.

Quesada's report of 1790 lists Bartolome Usina and his family at SA-16-23, and Bartolome Usina II and his family were reported to be residing in the same place in the 1793 census . The lot was finally sold to Usina in 1803 (Historic St. Augustine Preservation Board Files). It was occupied throughout the 19th and 20th centuries, and at least two houses and a grocery store were built in the lot during that time.

The documentary record indicates a short lifespan for the tabby foundation structures at the site. Probably built ca. 1740 (since Maria de la Cruz and Joseph Gallardos were married in 1728 (St. Augustine Historical Society n.d.)), the houses were gone by 1788.

The 1972 Excavation

The first archeological exploration at SA-16-23 took place in the Spring of 1972, when it was chosen as a site for the University of Florida's annual Field School. Directed by Dr. Charles H. Fairbanks, 18 students excavated for ten weeks at the site, and this excavation is the subject of a Master's thesis by Carl D. McMurray of the University of Florida (McMurray n.d.)

The excavation was originally undertaken to archeologically explore the remains of a Minorcan dwelling known to have been on the lot from 1780 (see p. 46, this chapter), as well as to pioneer "backyard archeology" through the determination of dietary elements and back lot features (Fairbanks 1972). During the course of the excavation, the emphasis came to rest on the foundations of two houses known to belong to

Maria de la Cruz in the 18th century, which were among the few First Spanish Period foundations excavated in St. Augustine.

The area excavated by Fairbanks (Figure 3) included the foundations of two houses, a small portion of the garden wall, part of the courtyard, and three wells. The excavation controls employed during the 1972 season were essentially similar to those used (and described below) in the 1973 excavation. A modified Chicago grid system was used, with coordinates measured North and East, and the site was excavated in 10 foot-square units. Vertical control was maintained with the use of a transit, and material was screened through 1/4 inch mesh on hand and gasoline-powered screens.

One house, at the north end of the site was aligned east to west, and the southerly house was aligned north to south. Both of the houses originally had tabby foundations and coquina block walls, and were two-room structures. The north house also had a loggia or covered porch on the south side.

The excavation concentrated on those foundations which were not covered by Spanish Street on the east, and the area between them. An exploratory trench was also excavated, extending 85 feet west from the northwest corner of the south house, which yielded disappointingly little evidence of back lot activity. The two wells which were excavated both proved to be 19th century features; one was a barrel well similar to that described below, and one was a coquina block well, both in the courtyard area of the lot.

Other features of interest at the site included six trashpits of 18th century context, and a wall trench cutting across the tabby foundation of the south house, which was identified as the trench for the house of Bartolome Usina.

Since the 1972 excavation uncovered the first portion of what proved to be the garden wall; the 1973 excavation grid was tied into the 1972 grid, and extended from it, initially following the garden wall. Data from the 1972 excavation have been incorporated into the analysis of the more recently excavated material whenever possible and appropriate, and this data will be discussed and included throughout the text.

Excavation Approach

Two hundred and fifty years of continuous occupation, coupled with frequent building and rebuilding, produced a complicated and often disturbed stratigraphic situation at SA-16-23. This is a common feature of historic site archeology, and is a major consideration in data recovery and excavation strategy. At SA-16-23, the 19th and 20th century occupation horizons were easily distinguishable as Zone I, and were generally stripped off and discarded. Features from these levels, cutting into Zone II (the 18th century occupation horizon) were also removed and discarded. The resulting artifact assemblage was therefore known to consist solely of material of a pre-19th century occupation. Due to the extensive site disturbance, however, there was in many instances intrusive disturbance in Zone II and sub-Zone II features; and Zone II itself was a mixed horizon. For these reasons most of the analysis pertinent to the

hypothesis has been based on proveniences--mostly undisturbed, sub-Zone II features--which are known stratigraphically to have resulted from the 18th century occupation of the site.

An extensive excavation approach was used at SA-16-23 in an attempt to expose as much of the 18th century lot area as possible. The objectives of the excavation procedure were to define activity and use areas in the lot--particularly women's activity areas; to learn the spacial relationships among the back lot elements and the houses themselves, and also to locate trash disposal areas within the lot confines which would yield information about specific dietary patterns of the SA-16-23 inhabitants.

Horizontal control was maintained with a modified Chicago grid set in three-meter intervals over the site, with north and east coordinates measured from a fixed point. The size of the excavation units varied, depending upon the nature of the area being excavated. Field notes, control data, levels, etc. for the 1973 SA-16-23 excavation are filed with the Historic St. Augustine Preservation Board, St. Augustine, Florida.

Vertical control was maintained with the use of a transit. An arbitrary datum was established before excavation began, and all levels, features, zones, etc. in the site were measured down from this datum. The base of Zone II (18th century horizon), which was the top of sterile yellow sand, was at a consistent depth throughout the site at 2.0 to 2.3 meters below datum (approximately .5-.8 meters below ground surface). All features which were first discernible at this level were included as

data possibly relevant to mestizo occupation.

The first stage of the excavation strategy was the exposure of the garden wall foundation which enclosed the 18th century lot, thus defining the geographic limits relevant to the problem at hand. Once this boundary was defined; rooms, wells, "courtyard" areas and areas outside the wall boundaries were excavated as units (Figure 3).

Three exploratory trenches were dug at the site (see Figure 3). Trench A ran in a north-south direction from the north edge of the main excavation, in an attempt to locate architectural or other features behind and between the two houses. Trenches B and C were attempts to locate the north wall of the house in lot 22, in order to confirm the identification of the garden wall as part of the de la Cruz complex. The wall was found at 1.4 meters south of the garden wall (Figure 3), running parallel to it. This was the north wall foundation of the home of Don Ruiz del Canzo, who occupied lot 22 at the same time that the de la Cruz heirs occupied lot 23 (Puente 1763).

Zone I was removed with shovels and discarded with the exception of two three-meter by three-meter units in which Zone I material was screened for a Zone I sample. Zone II, and material from all pits, post-holes, and other features, was screened through either an electric shaker screen covered with 1/4 inch hardware cloth, or through flat-bed hand screens, also covered with 1/4 inch hardware cloth. Soil samples were taken at intervals, and from trash pits for soil and possibly pollen analysis; and flotation samples were taken from certain features in order to recover plant and very small faunal remains.

By the second week of excavation, the screening process at SA-16-23 was converted entirely to water screening. A garden hose with a spray nozzle was attached to a spigot, and used to spray water over the material in the screens. The advantages of this process over hand or mechanical screening were found to include:

1. Recovery of faunal material and small objects was greatly increased
2. Work was much faster
3. Artifacts were cleaner and required a minimum of lab cleaning
4. Wear on the screens was decreased.

The site was only two meters above sea level, and ground water was subject to fluctuation with the tides, as well as local rains. This created a number of problems during the excavation. Throughout the three months' work, excavation was plagued and impeded by high water tables, a problem shared with many other historic sites. During the high tide period the site ground water rose to within 20 cm. of the ground surface, and in some cases excavation was suspended in a particularly deep feature because of intruding water. Water control measures which were employed included a small electric sump pump, the digging of sump pits, dam building, and diligent hand bailing. The most effective water control measure, however, was the use of well points. These points, which were driven into the ground by water pressure from a fire hydrant, were able to pump groundwater out of the ground from a depth of 12 feet. This created a fairly dry, workable unit of approximately three meters by two meters, which was invaluable in the well excavation that could not otherwise have been carried out. In order to prevent the groundwater

from being recycled immediately back into the ground, the 20-meter exploratory trench "A" was lined with plastic, and the groundwater pumped into this funnel to be released some 20 meters away from the excavation (Figure 4).

The 1973 excavations at SA-16-23 included the areas of the "kitchen," the courtyard, the outbuilding to the north of the kitchen, the midden area outside the garden wall, the exploratory trenches and the wells. To increase and maintain horizontal control within these areas, some of them were excavated in several units; however, they were analyzed as a single unit, and will be discussed as a unit unless otherwise specified.

The Kitchen

To the west of the south de la Cruz house, the tabby wall footing for a large, separate outbuilding was located. A rectangular structure measuring 7.5 meters from north to south and five meters from east to west, the building's south and west walls were formed by the garden wall itself (Figure 3). The footings were aligned parallel to those of the lot's south house, conforming very closely to the location of the "stone" outbuilding depicted on the Jeffries Map (Figure 2). These tabby wall footings ranged in width from 65 centimeters to 90 centimeters, probably due to differential erosion and preservation rather than to inconsistency in building techniques.

The kitchen area was excavated and analyzed as a single unit. Zone I was removed and discarded, while Zone II was removed and the material screened. The primary interest, however, was the features of

underlying Zone II, and which provided the undisturbed, 18th century contexts which were used in analysis. Several large trash pits were located in this area (Features 13, 15, 23 and 25), as well as fire pits and postholes (Figure 5). An isolated portion of a tabby wall footing aligned East-West in the approximate center of the structure was believed to be the remains of an interior partition. Fragments of coquina block and flat earthenware tile suggested that the structure was walled and roofed respectively with these materials.

Kitchens in 18th century St. Augustine were commonly detached (Manucy 1962:122), and the identification of this structure as a detached kitchen is based on the assumption that a kitchen area will contain a higher concentration of food preparation activity items than in other, non-kitchen areas of the site. Evidence of food preparation activities would include charred food remains, fire pits, and food preparation ceramics. It should be noted for comparative purposes that (1) the kitchen area constitutes 28% of the area excavated within the 18th century lot, and (2) only those proveniences known to date from the 18th century are included in the analysis.

Of the four fire pits located at SA-16-23, three of them were within the presumed kitchen area. One of these pits (Feature 24) contained a mass of charred corncobs, while the other two (Features 31 and 22) contained burnt sherds, animal bone and oyster shell. The fourth fire pit was located in Trench A, at eight meters north of the kitchen area, and it also contained burnt corncobs, shell, and sherds. Other

than these, no other fire pits with charred food remains were located during the 1973 excavation or the 1972 excavation.

It has been argued persuasively that in 18th century Florida, aboriginal San Marcos pottery functioned as a utilitarian ware, used mainly for food preparation (Otto and Lewis:n.d.). A high percentage of such a ware would therefore be expected in a kitchen area. At SA-16-23, 45% of all the San Marcos ceramics in the lot area (excluding the houses and the midden) were found in the kitchen area. This is a higher percentage than that found in the courtyard area (35%), and the outbuilding to the north of the kitchen (20%), even though these areas comprise 55% and 17% of the lot area respectively.

It should be fairly noted at this point, that a total of 2,274 sherds of San Marcos pottery were found within the south de la Cruz house during the 1972 excavation (96% of total ceramics) (Chance ms). This is nearly double the total number of San Marcos sherds from the kitchen area (1,355), and both structures contained approximately the same excavated area (the south house was not completely excavated, since the East side of the structure was under the paved road). It is difficult to include this data in the analysis, since the sampling techniques used to collect the data differed somewhat from those used in the kitchen area, the discard policies were not the same, and in the 1973 excavation, only those proveniences relevant to the hypothesis were included in analysis. It should be considered, however, that the concentration of San Marcos in what was obviously a dwelling, may cast doubt on the hypothesis that

San Marcos pottery was a food preparation ware only; it may also have served as a general household use and storage ware.

No oven, or feature which could be identified as the location of an oven was located in the kitchen area. However, the north portion of the structure, bounded on the south by the possible partition, contained all of the charred food remains and fire pits found within the kitchen foundation. The frequency of small pits and postholes was also greater in this portion of the site, and suggests that this portion of the kitchen may have been roofed, but only partially walled, to facilitate pit cooking.

Also in this north half of the kitchen area was the remnant of a tabby floor (Feature 26). The floor covered the northeast corner of the kitchen area, and was badly eroded (Figure 5). Because this feature was so fugitive, it was not possible to determine the original extent of the floor; however, it seems likely that it covered the north portion of the kitchen structure, at least. The floor, in profile, was seen to be near the base of the Zone II occupation level, and since Zone II material occurred beneath it, we may assume that the floor was laid sometime after the building was constructed and in use. Material associated with the floor includes predominantly San Marcos stamped pottery, but also Nottingham stoneware (1700-1810) (Noel Hume 1970:114); and San Augustin Blue on White Majolica (1704-1760) (Goggin 1960:187), dating its use at 1700-1750. The part of Zone II underlying the floor also contained predominantly aboriginal ceramics, but also included Spanish Majolica (Abo Polychrome--1650-1704; Puebla Polychrome--1650-1793; San

Augustine Blue-on-White--1704-1760; and San Luis Polychrome--1650-1793) (Goggin 1960:169, 173, 187), as well as a sherd of Astbury ware (1725-1750) (Noel-Hume 1970:123), providing a Terminus Post Quem of 1725 for the floor.

Immediately adjacent to the floor area was a gap in the north-east corner of the wall, which was undoubtedly an entrance to the building. There were also found, underneath the tabby floor, a line of three postholes, parallel to, and just inside of this entry (Figure 5). The only other possible entry to the structure was in the east side of the building, directly along the line of the central partition (Figure 5).

The south portion of the kitchen building yielded no evidence of a floor, and featured five large refuse pits. No specific technomic artifacts (Binford 1962:94) or features were recovered from this part of the structure, and its functions seem most likely to have been a general storeroom or non-specific work area.

The presence of sewing equipment in the kitchen building suggests that this structure was used also as either a laundry (clothesmending) or woman's work area. Of the three brass straight pins and three brass thimbles recovered from stratigraphically known 18th century proveniences, all of them came from within the boundaries of this outbuilding. (Three other pins and two other thimbles were recovered at the site, but none from closed contexts.)

Outbuilding North of the Kitchen

On the Jeffries Map of 1762, a smaller wooden structure was

depicted to the north of, and adjacent to the kitchen building. Only the southernmost two meters of this structure, adjacent to the kitchen, were excavated, and presented a complicated stratigraphic situation, rendering supposition about the outbuilding's function difficult.

The area was excavated in two units, dividing it in east and west halves. As in the excavation of the kitchen building, Zone I was removed and discarded, Zone II was removed and screened and the features underlying Zone II were concentrated on.

A probable wall trench (Feature 29) was located at the below-Zone II level, aligned with and extending from the kitchen's west wall (Figure 6). This trench yielded four aboriginal sherds, one sherd of blue and white delftware, one sherd of coarse, lead-glazed earthenware, and one sherd of white salt-glazed stoneware (1720-1805) (Noel Hume 1970:115-117); providing a Terminus Post Quem of 1720 for the outbuilding.

The entire excavated area of the outbuilding was disturbed badly by the construction of a 19th century coquina well. The well pit (Figure 6) contained transfer-printed and banded pearlware, indicating that the well was constructed after 1800 (Noel Hume 1970:128).

Only three features in this area escaped intrusion by the well construction. These were all trash pits, two in the western part of the structure (Feature 28, F.S. 81), and one in the Trench A (Feature 33). They all contained predominantly San Marcos ceramics and animal bone, but San Luis and Aranama Polychrome Majolica, white salt-glazed stone-

ware, Whieldon ware, and Rhenish grey stoneware were also present, suggesting a date of post-1720 for the use of the structure. It was noted in artifact analysis that a very high proportion of the glass drinking vessels and wine bottles came from the north outbuilding area, suggesting that this may have been a wine storage or tavern-like area for the household.

Courtyard Area

All of the remaining area excavated within the lot bounded by the garden walls is referred to as the courtyard (Figure 7). This was apparently a major area of household activity, since features were most frequent, and the Zone II strata was much richer in this area than in any other area of the site.

The portion of the courtyard immediately inside the garden wall, from the back of the south de la Cruz house, extending west to the front of the kitchen, was badly disturbed by 20th century water and gas lines. In addition to this, a large ditch (probably for drainage, since the land slopes downward from east to west) had been dug in this part of the site, adjacent to the garden wall. The material in the ditch indicated that it was filled in the mid-19th century, and in profile it was clear that this ditch extended from the Zone I level, thus rendering it useless for the problem to which the excavation was oriented.

The area of most intensive activity was that portion of the yard directly behind the south house. John Bartram, visiting St. Augustine in 1765, briefly described the yard of a Spanish house:

On the backside of the house or yard, where the main entrance is (for few but the grand houses, except taverns, had street doors, and these led mostly through a common passage to the court and kitchens; every court had its draw well) there is generally a terraced wall with seats of the same 18 inches high next to the house wall, to sit down upon when weary of walking. The walks about nine foot wide, with a staircase at one end to the chambers . . . (Harper 1942:52)

Although the portion of the courtyard excavated at SA-16-23 did not yield evidence of a terraced (tabby?) walkway, there was a draw well present. Since the floors of the houses excavated in 1972 were made of crushed coquina mixed with earth (MacMurray ms.), it seems unlikely that tabby floors for walkways would be present. There were also several groups of postholes below the Zone II level, which may have been the remnants of a covered walkway, or perhaps an arbor (Figure 7).

The most common features of this area were large, rich trash pits, particularly in the area surrounding the well (discussed below). In addition to the trash pits, one pit containing a clay-like fill similar to Feature 32 (see p. 62) appeared to be a latrine pit. The analysis of soil samples taken from this pit revealed that the fill contained clay, with a very high level of phosphates, nitrates, and calcium. The phosphate and nitrate levels are typical of human waste material, and the calcium level could have resulted from lime added to latrine pits to aid in the breakdown of organic matter (Soil analysis by W. Nesmith, University of Florida Agriculture Extension Service). Several scattered concentrations of clay were revealed at the base of Zone II, which were found to contain a high concentration of kaolin. When fired, this clay was very similar in behavior and texture to clay found in a deposit

approximately 15 miles south of the site, on the intracoastal waterway (Street Urchin Pottery, St. Augustine, Florida. personal communication, St. Augustine 1973). The presence of this clay in the courtyard area led to the hypothesis that the yard was an area of craft activity, which was tested in artifact analysis. It was found that 84% (32 fragments) of the worked flint from the site (excluding European gunflints), came from the courtyard area, supporting the hypothesis that craft activity was carried out here. No evidence of other craft activity was recovered from the site.

Areas Outside the Garden Walls

The excavation of SA-16-23 included three areas which were not within the 18th century garden walls. These were: 1. The excavation south of the wall, 2. The excavation to the west of the wall (behind the kitchen), 3. The exploratory trenches.

The area to the south of the garden wall revealed scant 18th century activity. A good deal of 19th and 20th century debris, and several large 19th century trash pits, along with a single 18th century feature were present. This feature was a small pit directly adjacent to the outer side of the garden wall, filled with oyster shell and some sherds of San Marcos ware, white salt-glazed stoneware, delftware, and slip-decorated earthenware, dating the pit at post-1720 (Noel Hume 1970). This was a feature belonging to lot 22, occupied by Don Ruiz del Canzo in the 18th century (St. Augustine Historical Society n.d.). The two exploratory trenches to the south of the garden wall also revealed very

little of the 18th century occupation. The western trench (of the two exploratory trenches south of the wall--see Figure 3) did reveal a portion of Canzo's house wall.

To the west of the garden wall, behind the de la Cruz complex, a rich midden area and a well were located (Figure 3). The densest bone, shell and sherd concentrations were in the three meter square designated 212N 182E, which was .75 meters behind the kitchen building; a convenient tossing distance. Few pits or other features were present and the area seemed to be simply a midden zone. The well excavation is discussed below.

The exploratory trench to the north of the main excavation was dug to locate other lot elements, and also to locate a wall dividing the north and south houses, if such a wall existed. No trace of a dividing wall was uncovered in the exploratory trench, which was 18 meters from south to north, and one meter wide. Although several random postholes were apparent below Zone II, none of them could be attributed to a wall trench. Zones I and II were removed and discarded in a search for features underlying Zone II, which contained a much lighter concentration of cultural refuse than did Zone II in the rest of the site. Several 18th century features were present, however, in the trench. The most notable of these was designated Feature 32, which was a circular pit with a clay-like fill similar to that of Feature 34 in the courtyard, with approximately the same proportion of elements revealed in the soil sample as were found for Feature 34. Cultural material retrieved from the pit included two

wrought nails, two brick fragments, aboriginal San Marcos sherds, and a sherd of slip-decorated earthenware.

Four other pits of irregular shape and depth contained predominantly aboriginal material, but these were scattered and not associated with any other features or postholes. The pattern suggests a minimum of activity in the portion of the lot behind and between the houses in the 18th century. This was probably a garden and orchard area, such as those designated on the Puente Map.

The Wells

There were two 18th century wells located on the de la Cruz lot, both of which were excavated in the 1973 season. The first well was located in the courtyard area between the kitchen and the south house. This was the earlier of the two wells, and was constructed entirely of wooden barrels. The top of the well became apparent at 72 centimeters below the surface of the ground, as a circular black ring of soil 70 centimeters in diameter (Figure 8). Surrounding the well was an irregular area of mottled brown soil, which was the well pit, at the bottom of which the barrels were set and sunk into the ground.

The well pit, 1.35 meters in diameter at the widest point, was originally due to a depth of 76 centimeters below the colonial ground surface. At the base of this pit, a wooden barrel was sunk deeper into the ground, to a depth of 1.69 meters, with a second wooden barrel set upon the one in the ground (see Figure 9). This produced a well 1.69 meters in depth from the colonial ground surface.

The two barrels of which the well was constructed were both made entirely of wood. The upper barrel was constructed of 20 vertical staves, ranging from 4.5 to 12 centimeters in width; the mean stave width being 8.1 centimeters and the median stave width 8.0 centimeters, indicating careful cooperage. At the top of the upper barrel the diameter was 70 centimeters, and the barrel extended for 80 centimeters to the point where it was joined to the lower barrel. This lower barrel was also constructed of vertical staves, but these were enclosed by horizontal bentwood staves of 3.5 centimeter width, on the outside of the barrel (Figure 10). These horizontal staves held the vertical stave together, and were secured not by nails, but by wrapped cane splits in the fashion of modern rattan patio furniture (Figure 10).

Because of the very high water table, it was not possible to expose the exterior of the barrels all the way to the base of the well, but nine horizontal staves were counted on the outside of the barrel before the mud made the outer surface inaccessible, suggesting that the entire barrel was enclosed by these staves.

At the point of juncture of the two barrels, where the horizontal staves began, the widest diameter of the well was reached. This diameter was 1.05 meters, and from this point the lower barrel tapered inward to its base, and the base of the well itself, which was 90 centimeters below the top of the horizontal staves, and 50 centimeters wide.

The well and the well pit were excavated in profile until the rising water table would no longer permit this; at which point the well contents

were simply removed. Because the water table at the site was approximately at the level of the well's first appearance, four well points were sunk before the excavation of the well began. These points held the ground water under control to a depth of about 1.5 meters below the present ground surface. At this point the excavation of the well contents continued with improvised, long-handled "well scoops", and bucket sieves which were placed upside down in the well, pressed into the mud by a crew-member (also in the well) and pulled up by a rope, bringing a load of mud and artifacts with it.

The ceramic material recovered from the well pit provided a Terminus Post Quem for the construction of the well, since it was filled in at the time of well construction. The contents included:

- 272 aboriginal San Marcos (1685-1750) (Smith 1948)
- 1 Abo Polychrome Majolica (1650-1704) (Goggin 1969:169)
- 1 Columbia Plain Majolica (1400-1800) (Ibid.:117)
- 3 Puebla Blue and White Majolica (1704-1780) (Ibid.:190)
- 2 Puebla Polychrome Majolica (1704-1780) (Ibid.:173)
- 1 San Augustin Blue and White Majolica (1704-1760) (Ibid.:187)
- 1 San Luis Polychrome Majolica (1650-1793) (Ibid.: 166)
- 1 Slip decorated Earthenware (1670-1795) (Noel Hume 1970:134-136)
- 4 Olive Jar (Goggin 1970)
- 1 Blue on white Oriental Porcelain (1660-1800) (Noel Hume 1970:257)

These sherds indicate a well construction date during the first quarter of the 18th century.

The ceramic contents of the well itself provide a Terminus Post Quem for the use of the well, most likely the filling in of the well. Since the water table in St. Augustine is so high, and the soil soft and sandy, wells in the 18th century were not difficult to construct and shallow wells became foul quickly. They were thus often filled in and abandoned rather than cleaned out when they became foul (Manucy 1962:126). The barrel well at SA-16-23 yielded disappointingly little in artifact material, the most notable find being a whole preserved orange (see Chapter IV). In addition to two brass gun side plates, plant remains, and a few leather scraps of indiscernible origin, the well contained mainly mud laced with a few potsherds. These included:

119 aboriginal San Marcos (1685-1750) (Smith 1948)

1 San Luis Polychrome Majolica (1650-1793) (Goggin 1969:166)

2 Blue and White Delftware (1600-1802)

3 Slip decorated earthenware (1670-1795 (Ibid.:134-136)

3 Olive Jar (Goggin 1970)

suggesting a Terminus Post Quem of 1685 for this well. There was no evidence of a well house, curb, or other structure around the well itself.

The second well on the site was located behind (west) of the kitchen and the garden wall. This well was more poorly defined than the one in the courtyard, and appeared to have been partially filled in during the late 18th century, caving in and being covered over shortly afterwards.

This second well was constructed of a coquina block casing around wooden barrels. (Coquina stone is a natural shellstone which occurs in

major deposits near St. Augustine, where it was quarried from 1600 onward). Located in a midden area behind the kitchen, the well first appeared as an irregular black pit 63 centimeters below the modern ground surface. Since the well was located in the corner of an excavation unit, and near the end of the field season, the entire well pit was not exposed. That portion of the well pit which was excavated, however, was filled with sterile sand, and thus yielded no dating criteria for the well construction.

At 32 centimeters below the top of the well, a mass of coquina blocks was recovered, apparently part of the upper coquina block casing which had caved in. After being mapped and measured, these blocks were removed to reveal more cut blocks in situ as the well casing. This coquina casing extended to at least 78 centimeters below the top well (1.38 meters below present ground surface); however since well points were not available at the time, the excavation was forced to discontinue at that level.

Inside the coquina casing, at 64 centimeters below the top of the well, the top of a wooden barrel appeared (Figure 11). Again the unfortunate circumstances of water level, time, and the absence of well points prevented the determination of the length of the barrel, the base of the well, or whether there was more than one barrel in the well. Judging from the depth of the first well, however, and the lengths of the barrels within it, it seems likely that there was not another barrel below the one discovered in the coquina well. If this barrel were 90 centimeters long,

as the lower barrel in the earlier well was, the coquina-barrel well would have extended to 1.54 meters below the colonial ground surface--only 15 centimeters shallower than the earlier well, and considerably below the water table.

The barrel enclosed by the in situ coquina casing was 70 centimeters in diameter at the top, and this top was encircled by a flat metal band four centimeters wide, rather than the horizontal wood staves found in the earlier well. The casing blocks which surrounded the barrel were ten centimeters thick, forming a total well diameter of 90 centimeters. The blocks which had fallen from their original casing positions showed that while the thickness was consistently near ten centimeters, the breadth and length of the blocks varied somewhat, most of them being approximately 20 by 20 centimeters square. It is also possible that there was originally a barrel above the one revealed during excavation, which was removed, provoking the collapse of the coquina casing. This explanation for the disturbed blocks is more plausible than the possibility that these blocks formed part of the well curb, since they were all recovered at a level well below both the top of the well itself, and the colonial ground surface.

As so frequently occurs during excavations with a limited time schedule, important, time-consuming features are discovered at the end of the field season. This was the unfortunate case for the second well, which was recognized near the end of the last week of excavation, when all of the well points were employed elsewhere in the site. The major

obstacle to excavation, again, was the high water table, and in the absence of well points, rapid and continuous hand bailing was found to be the most effective technique for water control. In this way it was possible to expose the upper 65 centimeters of the well for mapping, and to maintain controlled recovery of material to a depth of 75 centimeters.

Even though the well was only partially excavated, a much richer artifact assemblage was recovered than that from the earlier well, including metal, ceramics, glass, and a large quantity of animal bone. A substantial number of wrought nails and spikes was found, along with various musket parts (see Chapter IV), including the lock piece from a Spanish infantry musket issued in 1752 (Brinkerhoff and Chamberlain 1972:54), but the ceramics are the best aid in dating the well. The material used to fill in the well included predominantly aboriginal San Marcos pottery, as well as many more British ceramics than were found in the courtyard well. These ceramics include:

- 231 San Marcos aboriginal ware (Smith 1948)
- 2 Puebla Blue on White Majolica (1704-1780) (Goggin 1969:190)
- 2 San Luis Blue on White Majolica (1630-1690) (Ibid.:155)
- 1 San Luis Polychrome Majolica (1650-1793)(Ibid.:166)
- 1 Puebla Polychrome Majolica (1704-1780) (Ibid.:173)
- 2 Columbia Plain Majolica (1400-1650) (Ibid.:117)
- 32 Slip Decorated Earthenware (1670-1795) (Noel Hume 1970:134-136)
- 6 Blue and White Delftware (1600-1802) (Ibid.:105)
- 6 Plain Delftware (1640-1800) (Ibid.:109)

3 French Faience

4 White Salt-Glazed Stoneware (1720-1805) (Ibid.:115-117)

1 Nottingham Stoneware (1700-1799) (Ibid.:114)

1 Westerwald Stoneware (1750-1775) (Ibid.:284-5)

28 Shell-edged Creamware (1762-1780) (Ibid.:126-8)

1 Olive Jar (Goggin 1970)

Dating the ceramics in the well according to currently accepted dates, the presence of Creamware suggests that the well was filled in during the period of British occupation in St. Augustine (1763-1788); possibly during the occupation of Samuel Pyles or Bartolome Usina. Since the well pit contained sterile sand, the construction of the well cannot be dated; however, since the early Creamware was the latest ceramic type in the well, it is surmised that the well was built, and possibly even filled in, during the de la Cruz occupation. Other proveniences at this site indicate that Creamware occurs here somewhat earlier than the 1762 which is currently accepted (see Chapter IV), possibly as early as 1740, in which case the well could have been used and filled in during the late de la Cruz occupation. There are several other indications that this may be the case:

1. The application of Stanley South's Mean Ceramic Date Formula (South 1973) produces a mean date of 1748.06 for the well (this is slightly earlier than the mean date for the site as a whole (See Appendix I).
2. Also found in the well was the side piece from a Spanish musket of 1752 issue. This suggests that the well was filled during the first Spanish

period, since the lot was not occupied by a Spaniard during the second Spanish period, and Spanish arms would not likely be left behind when the Spaniards left for Cuba in 1763.

3. The presence of the well in a Spanish-Indian midden, its convenient proximity to the Spanish-Indian kitchen, and the abundant presence in the fill of San Marcos and Spanish ceramics also suggests that the well was a first Spanish period feature.

If the well was indeed filled during the first Spanish period, a strong indication that Creamware, including the shell-edged variety, occurs prior to 1762 is provided, and should be considered with the relevant data in Chapter IV.

CHAPTER IV

RESULTS OF THE HYPOTHESIS TEST

As was pointed out in the preceding chapter, only those artifacts which were recovered from stratigraphically and contextually certain 18th century proveniences are used in the analysis of the material from the site, and the determination of its relevance to the hypothesis outlined in Chapter II. Since the sample conforming to these criteria is quite large, the purposes of the approach are twofold:

1. To provide the most rigorous test possible for the hypothesis and its test implications.
2. To maintain the strict provenience control which creates, in Stanley South's terms a "Primary Research Priority for Data Analysis" (1974); thus providing a source of information and association to be applied to the artifacts found in these proveniences, rather than drawing from the meager "data bank" of knowledge about Spanish Colonial material culture in order to interpret those artifacts.

Women's Activities

Food Preparation Techniques and Equipment

These two aspects of the first test implication will be considered together, since they are interdependent aspects of the same system, and

much of the information about the former is drawn from the latter.

The most prevalent evidence for food preparation equipment and technique at SA-16-23 was ceramic, and by far the most ubiquitous ceramic type was San Marcos Stamped pottery and the various sub-types of that ware (Smith 1948). Of the total number of sherds recovered during the 1972 excavation at the site, (37,754), 64 percent of them (24,822) were of the San Marcos variety. Of the 4,501 sherds from closed 18th century contexts, recovered during the 1973 excavation, 3,220 (71 percent) were San Marcos Stamped.

In their analysis of the San Marcos pottery from SA-16-23, Otto and Lewis (n.d.) hypothesized that, due to the relative absence of metal vessels, and the presence of abundant, easily accessible and easily replaced San Marcos pottery in 18th century St. Augustine, this locally made pottery ware was used as the primary food preparation equipment.

The test implications suggested by Otto and Lewis, which would support the hypothesis that San Marcos was the primary food preparation ware, included:

1. Utilitarian ware sherds would be found in substantial quantities on domestic sites, because utilitarian vessels would be used daily, handled roughly, and broken frequently.
2. If Spanish utilitarian earthenware, or iron (metal) pots were used for cooking, these would be archeologically recovered.
3. Vessel forms would be globular or hemispherical, or some variation of this form, as the most suitable shape for cooking liquid or semi-liquid foods.

4. Direct evidence of use in food preparation may appear on some sherds. This could include signs of exposure to fire, or even encrusted food remains.

The San Marcos pottery from the 1973 excavation was analyzed within four major provenience areas: 1. The kitchen 2. the outbuilding to the north of the kitchen 3. the courtyard and 4. the midden behind the kitchen. Data from the 1972 excavation of the south house was also used, but with reservation, since the sampling techniques which were employed in that section of the site were somewhat different than those employed during the 1973 excavation (see Chapter III). The distribution of San Marcos ceramics within and among these proveniences is shown in Table 1.

H-1 Frequency of San Marcos

It can be seen from Table 1 that San Marcos Stamped pottery overwhelmingly predominates in the ceramic assemblage at the site. This is particularly evident in the midden area, where frequently broken utilitarian vessels would have been discarded. The percentages of San Marcos pottery from both excavations, in relation to the total ceramic assemblage, also supports this test implication.

The sherds of San Marcos Stamped from SA-16-23 are typically from paddle-malleated, coiled pots. In their analysis of 613 diagnostic sherds from nine closed contexts at the site, Otto and Lewis describe seven surface treatments of San Marcos Stamped, including simple stamped, cross-simple stamped, check stamped, complicated stamped, plain,

TABLE 1Distribution of San Marcos Ceramics

(closed proveniences)

<u>Provenience</u>	<u>Sherd Total</u>	<u>San Marcos Total</u>	<u>% of Ceramics (within prov.)</u>	<u>% of S. M. in Site Total</u>
Kitchen	1154	909	80	22
Midden	670	577	86	13
Outbuilding	536	441	82	10
Courtyard	2141	1293	60	29
South House (1972)	2370	2274	96	74

TABLE 2Distribution of Surface Decoration on
San Marcos Ceramics from SA-16-23

<u>Surface</u>	<u>Number</u>	<u>Percent of Sample</u>
Simple Stamped	136	.22
Cross-Simple Stamped	256	.41
Check Stamped	35	.06
Complicated Stamped	40	.07
Plain	58	.09
Burnished	6	.02
Red Filmed	39	.06
	<u>613</u>	<u>1.00</u>

burnished, and red-filmed (Otto and Lewis n.d.). In addition to these, there were rare occurrences of cord-marked, cob-marked, and punctated San Marcos sherds from the 1973 excavation. The distribution of these surface treatments is shown in Table 2.

The surface hardness of the San Marcos ware is 3.5 on the Moh scale, and the sherds were tempered with sand, limestone, and shell; all tempering types occurring with all surface decorative styles. Rims were usually undecorated, flared and folded, although in a small proportion of the sherds the stamping continues to the lip of the vessel. On the undecorated rims, a line of circular reed punctates or wedge-shaped punctates encircle the neck of the vessel immediately beneath the rim (Otto and Lewis n.d.).

The San Marcos assemblage from the de la Cruz site does not appear to differ markedly from 17th century assemblages described by Smith (1948) for the Castillo de San Marcos moat; by Hemmings and Deagan (1973) for Na-41 on Amelia Island or by Macmurray (1974) for San Juan del Puerto.

H-2 Other Possible Food Preparation Wares

Although documentary sources indicate that metal cooking pots were imported to St. Augustine (Contaduria 1616; Harman 1969:91) no evidence of a metal cooking pot was recovered from a closed 18th century context at the site. Nearly the same situation occurs for Spanish utilitarian earthenwares, and the coarse, lead-glazed earthenwares which could have been of British or Spanish origin. The distribution of all possible European utilitarian wares follows:

<u>Provenience</u>	<u>Number</u>	<u>% of Ceramics within Provenience</u>
Kitchen	15	1.6
Midden	8	1.2
Outbuilding	12	2.0
Courtyard	58	2.0
South House	17	0.7
Total	110	

European utilitarian earthenwares were not an important ceramic type at the de la Cruz site, and were not a predominant ware for food storage or food preparation. This is in sharp contrast to the situation found at the site of Santa Rosa Pensacola, occupied during the same period as the de la Cruz site (1722-1752). Here the fragments of eight iron pots were found, as well as 6,498 sherds of Spanish earthenwares (Smith 1965:128-131).

Included in the category of European utilitarian wares are Olive Jar (Goggin 1960), Spanish Storage Jar (Noel-Hume 1970:144), El Morro Ware (Smith 1962:68), Rey Ware (Smith 1962:69), and coarse, lead-glazed earthenware of uncertain origin (Figure 13). The distribution of these ceramic types within the proveniences is:

	<u>Olive Jar</u>	<u>Lead-glazed Earthenware</u>	<u>Spanish Storage</u>	
Kitchen	7	4	2	(13)
Courtyard	30	18	5	(53)
Outbuilding	5	6	2	(13)
Midden	2	4	1	(7)
Total	44	32	10	(86)

None of the sherds in this group exhibited evidence of vessel form, with the exception of the Olive Jar ring neck fragments. Of the coarse, lead-glazed earthenware, most sherds seemed to be of El Morro ware, rather than the finer Rey Ware. The glazes were predominantly yellow or green, with an occasional occurrence of a honey-brown glaze. In all cases, this coarse earthenware was indistinguishable from the coarse, lead-glazed utilitarian earthenware found at the site of Frederica, Georgia, which was also occupied at approximately the same time as the de la Cruz site. The lead-glazed earthenware at Frederica has been attributed to British origin, and kitchen-ware function (Deagan 1972), and could have easily been imported to St. Augustine as part of the illicit, but thriving trade system.

H-3 Food Preparation Vessel Form

San Marcos Stamped vessel forms from 1973 closed contexts included two globular bowls and the conoidal base of a stamped pot. Portions of two, deep, conoidal jars were recovered from the 1972 excavation, and probably most resembled the deep globular San Marcos bowls evidenced at Amelia Island (Hemmings and Deagan 1973:15), and described by Smith (1948).

Although the traditional San Marcos vessel form appears to have persisted until the time of the de la Cruz occupation, there is some evidence in the ceramic assemblage of European influence.

Fifteen handles from San Marcos vessels were recovered from the site, including strap handles, loop handles, lug handles, and pipkin-

like handles (Figure 14), which would have functioned for lifting heavy, hot pots of food. Lug handles were the most frequently encountered during the 1973 excavation, although strap and loop handles were more common during the 1972 excavation, which concentrated on the houses; and some of these handles appeared to be the result of European influence. The loop handles particularly may have been inspired by handles on the Spanish olla or water jar, or may represent English ceramic influence on the Guale or Yamassee Indians who coexisted with the British colonists before moving to the St. Augustine area in the 17th and 18th centuries (Otto and Lewis n.d.). There are also formal similarities between some San Marcos handles and handles from British earthenware pipkins and slipware vessels (Figure 14).

Other European influence is apparent in certain forms found at SA-16-23. These include fragments of foot rings, a flat-based vessel (probably to allow the vessel to sit on a table surface) and one plate form (Figure 15).

H-4 Direct Evidence of Food Preparation

Direct evidence of food preparation on San Marcos ceramics included sooting and encrusted remains on the sherds. From the 1973 excavation, 38 such sherds were recovered from closed contexts, and with the exception of two sherds of Spanish utilitarian earthenware recovered from a mixed occupation zone, these were the only sherds on the site which exhibited direct evidence of food preparation.

On all but three of the sherds, sooting was on the exterior only,

indicating that the pots had been used in or over a direct fire. Three other sherds had charred encrustation on the interior, probably from a stew or gruel, since the most commonly prepared dish in Spanish or Indian-Spanish homes seems to have been a stew based on maize or fish, or both (Andrews and Andrews 1945:86; Covington and Falcones 1963:150).

San Marcos ceramics, on the basis of the above analysis, can be designated as the primary food preparation equipment at SA-16-23. The absence of significant amounts of European earthenware also suggests that San Marcos pottery was used for storage vessels at the site.

This supports the first test implication of the general hypothesis; that food preparation equipment will be primarily aboriginal, with some Spanish elements. Although the ware and its apparent usages are primarily Indian, some modification in form and use due to Spanish influence are present.

The data from SA-16-23 also suggests that San Marcos was used as a predominant ware for storage vessels, possibly more important than Spanish Olive Jar. The distribution of the ware indicates that while it is the predominant artifact in all areas of the site, it clusters in the kitchen, outbuilding and midden areas of the site; areas used for food preparation and refuse disposal (Table 1).

Non-Ceramic Evidence of Food Preparation

As noted above, no evidence for a stove or oven was found in any area of the de la Cruz site. The Spanish governor's kitchen in St. Augustine was known to have contained a hornillo, a small stone oven

(Manucy 1962:158), and John Bartram noted stone ovens in the Spanish kitchens of St. Augustine during his 1765 visit (Harper 1942:52).

Five circular fire pits containing ash layers and charred food remains were located at the site, and constituted the only direct evidence for cooking areas. Three of these pits were in the north half of the kitchen area, and the other two were in the lot area behind and between the two houses. The presence of these open fire pits to the north of the divider in the kitchen building, associated with a posthold pattern (see Chapter III), suggests that this half of the kitchen may not have been enclosed. It may instead have been a roofed, but open area with partial walls, allowing the cooking smoke to escape. The complex of fire pits, charred food remains, and a high positive correlation with San Marcos pottery designates this building as the focus of cooking activity. The absence of charred food remains or fire pits in the south house, in association with a very high proportion of San Marcos pottery, suggests that this area may have been used for food storage rather than food preparation and consumption.

Two mano fragments, a "mortero," and a portion of a metate represent the introduced food preparation equipment at the site. (Figure 16). These were made of volcanic basalt, not native to Florida, but commonly found in Central Mexico and quite similar to examples found archaeologically in that area (MacNeish et al. 1967:103-104). These were also similar to those recovered at the site of Santa Rosa Pensacola (Smith 1965:106).

The metate fragment seems to have come from a boulder metate, a generalized, legless metate form found commonly in Mexico (MacNeish et al. 1967:117). These are Mesoamerican food preparation items, of aboriginal origin, which had analogues in aboriginal Floridian technology; most often flat stones. The introduction of such items of female culture by the male-dominated culture in St. Augustine is more easily understood as a natural adjunct to the introduction of Mesoamerican food items, specifically corn, by the Spanish who had been in Mesoamerica for more than half a century when Florida was founded. The acceptance of these food preparation elements by Indian women such as Maria de la Cruz was probably on the basis of greater efficiency of the basalt manos and metates over the simple stones of Florida. As early as 1569, some 39 metates and manos were received in St. Augustine (Contaduria 1569), and possibly by the 18th century they also functioned as socio-technic items for Indian and mestizo women (Binford 1962:95).

A single fragment of a sherd griddle, made from San Marcos paste, was recovered at the site (Figure 16). This fragment was burnished on one surface, probably for cooking, and roughly smoothed on the other surface, which also showed fugitive patches of soot. The griddle fragment was recovered from a closed 18th century context in the area of the outbuilding adjacent to the north wall of the kitchen. The griddle is not a native southeastern food preparation item, and the concept was probably introduced from Mexico or the Caribbean as part of a food or food preparation complex. The corn which was ground with the

Mesoamerican grinding equipment at SA-16-23 may have been prepared as tortillas on a locally made sherd griddle. Griddles may also have been used to toast cassava or manioc cakes in the manner described for manioc preparation in the Antilles (Moya et al. 1957:29). A fragment of a sherd griddle was also recovered at the site of the mission of San Juan del Puerto (Du-53) (J. MacMurray, personal communication, Gainesville, Florida. 1973), occupied from 1578 to 1702, and the fact that no sherd griddles have been reported from prehistoric sites in Florida suggests that the use of a griddle was a trait introduced from the Caribbean or Mexico, by the Spaniards, rather than through prehistoric aboriginal contact.

The food preparation complex revealed through the equipment and techniques used at the de la Cruz site included elements of southeastern Indian, Mesoamerican, and possibly Spanish food systems, singly and in various combinations. The equipment introduced by the Spanish to St. Augustine was Mesoamerican or Caribbean rather than Spanish, since the food resources themselves were imported from these areas. The introduced equipment replaced the aboriginal equipment when the new forms (basalt manos and metates) were more efficient than the native analogues, or met culinary demands of Spanish household members (such as finely ground corn) more efficiently than the simple stones or wooden mortars of aboriginal technology. Such items as San Marcos pots and simple fire-pit cooking were not replaced by introduced Spanish analogues (metal pots and stoves), possibly because these items of female

culture were not made available as part of a food complex. A new form and technique can be seen in the griddle fragment, probably also introduced as part of the corn or cassava complex, and accepted by Indian women in Spanish-Indian or mestizo households to satisfy criollo or New World Spanish palates.

Food Resources: Subsistence at SA-16-23

Faunal and floral remains recovered from closed, first Spanish period contexts at the site included both native and introduced food resources, conforming both to documentary data on food sources in St. Augustine, and to the first test implication of the hypothesis (Chapter II). Since food preparation techniques and equipment are largely dependent upon the available food resources, the subsistence data is of particular importance to those aspects of the hypothesis.

Floral Remains

Five pits containing charred corn cobs were excavated at the site; all of which were sub-midden features. The corn from these pits has been given a preliminary identification of ten-row Caribbean Flint corn, a species known to have occurred at several late prehistoric sites in the southeast, including 8-J-5 (Bullen 1958:32), Seaborn mound (Neuman 1961:79), and the Zetrouer site (Seaberg 1955). (The corn samples are currently undergoing further analysis at the University of Massachusetts by W. C. Gallinat). At Santa Rosa Pensacola, however, which was occupied during the period of the de la Cruz site occupation, Hale Smith recovered corn samples which were identified as Mexican corn

(Smith 1965:109), which the Spaniards were importing to Florida along with corn preparation equipment. Mexican corn was being brought to St. Augustine with the corn preparation equipment (Contaduria 1718; 1721), and corn was also grown at the Indian villages on the periphery of the town (Chatelaine 1941:Map 10). The corn grown in the Indian villages was probably used primarily for consumption by the inhabitants of the villages themselves, and in times of hardship, possibly by the townspeople. It seems likely, however, that Indian women living in the town would have easier access than Spanish or criollo townspeople to corn grown in the Indian villages, particularly if, like Maria de la Cruz, she was born in an Indian town. Only more archeology and ethnobotanical analysis can determine whether or not southeastern corn was associated primarily with Indian and mestizo households in St. Augustine.

Other plant remains from the de la Cruz site included fruits which may have been grown in a household garden. Two varieties of watermelon (*Citrullus lanatus* and *Citrullus vulgaris*, the latter of which is used primarily for pickling rind) were recovered, as well as peach pits, wild cherry (*Prunus serotina*), pumpkin (*Cucurbita pepo*) and one whole orange (*Citrus* sp.) preserved in the courtyard well. (All plant identification is by Mr. David Hall of the University of Florida Botany Department Herbarium.) Of these plants, the pumpkin and wild cherry were probably local plant resources, while the peach, watermelon, and orange were certainly introduced.

Although the species of orange could not be determined from

the remains, it is believed that this was a Seville, or sour, orange. There were large numbers of orange trees in St. Augustine during the Spanish period, and the largest-producing trees were sour orange trees (De Brahms in Fairbanks 1881:89). These were also the most abundantly used oranges during the early British Period, when large quantities of sour-orange juice were exported for use in the preparation of "shrub," a popular alcoholic drink among British colonists (Davis ms).

Faunal Remains

The emphasis upon wild food remains in the acculturated diet is most strongly reflected in the faunal remains from the site. The faunal resource data is based upon a sample of 642 identified bone fragments, representing all of the identified bone from 13 closed, Spanish period contexts. Table 3, based on the bone analysis by Mr. Stephen L. Cumbaa of the Florida State Museum Zooarcheology Laboratory, shows the distribution of number of fragments and minimum number of individuals for the sample.

Of the mammals probably used as a food source, domestic pig and cow were encountered most frequently, and were undoubtedly an important protein source. The pig individuals from the site were all young: one suckling pig, one juvenile and one young adult; while the cow remains were from one juvenile and one mature adult. A single mature adult specimen of white-tailed deer was found. Large mammals were all butchered with metal knives and saws, and numerous longbone fragments were recovered, presumably split to recover marrow or boil for fat.

TABLE 3Faunal Remains from SA-16-23

	<u>Common Name</u>	<u>Min. Number Indiv.</u>	<u>Frag- ments</u>
<u>MAMMALS</u>			
Scalopus aquaticus	Eastern mole	1	4
Sciurus carolinensis	Eastern gray squirrel	1	1
Mus musculus	house mouse	1	2
Rattus rattus	black rat	1	3
Urocyon cinereoargenteus	gray fox	1	1
Procyon lotor	raccoon	1	2
Felis catus	domestic cat	1	2
Sus scrofa	pig	3	24
Odocoileus virginianus	white-tailed deer	1	9
Bos taurus	domestic cow	2	64
Homo sapiens	human	1	1(toot
<u>BIRDS</u>			
Anas discors	blue winged teal	1	1
Lophodytes cucullatus	hooded merganser	1	1
Gallus gallus	domestic chicken	2	4
Meleagris gallopovo	turkey	1	2
cf. Burhinus bistriatus	Mexican thick-knee	1	1
cf. Numenius americanus	long-billed curlew	1	1
Limnodromus griseus	short-billed dowitcher	1	1
Capella gallinago	snipe	1	1
<u>AMPHIBIANS</u>			
Bufo cf. B. terrestris	toad	2	10
Rana sp.	frog	1	1
<u>REPTILES</u>			
Chelydra serpentina	snapping turtle	1	1
Malaclemmys terrapin	diamondback terrapin	2	8
Gopherus polyphemus	gopher turtle	1	2
Cheloniidae	sea turtle	1	46
Masticophis flagellum	eastern coachwhip snake	1	1
<u>CARTILAGINOUS FISHES</u>			
cf. Galeocerdo cuvieri	tiger shark	1	1
Carcharhinidae	requiem shark family	(1)	2
Sphyrna sp.	hammerhead shark	1	1
Pristis sp.	sawfish	1	1

BONY FISHES

<i>Arius felis</i>	sea catfish	21	131
<i>Bagre marinus</i>	gafftopsail cat	5	30
<i>Ariidae</i>	sea cat family	(1)	103
<i>Cynoscion nebulosus</i>	spotted sea trout	1	1
<i>Cynoscion</i> sp.	sea trout family	1	2
<i>Pogonias cromis</i>	black drum	2	15
<i>Sciaenops ocellata</i>	red drum	3	15
<i>Sciaenidae</i>	drum family	1	1
<i>Archosargus probatocephalus</i>	sheepshead	6	41
<i>Mugil</i> sp.	mullet	13	85
<i>Paralichthys</i> sp.	flounder	2	12
<i>Opsanus tau</i>	oyster toadfish	3	6

INVERTEBRATES (from Feature 28)

	crab	1	1
<i>Urosalpinx cinerea</i>	Atlantic oyster drill	2	
<i>Busycon contrarium</i>	lightning whelk		
<i>Ostrea virginica</i>	Eastern oyster	448	
<i>Mercenaria mercenaria</i>	Northern quahog	10	
<i>Tagelus plebius</i>	stout tagelus	14	

The state of bone preservation indicated that these large mammals were roasted or heavily boiled, since "bone roasted within the joint loses much of its organic matter, becomes brittle, and consequently preserves badly. The same conditions hold true when the bone is heavily boiled."

(Chaplin 1971:14-15). Bone remains from the large mammals were poorly preserved at the site, whereas small bones from fish, birds and other small animals was well-preserved (Cumbaa personal communication 1974). These smaller bones were probably subjected to slow simmering in soups or stews, rather than roasting or heavy boiling.

Butchering techniques for cow and pig were determined by Cumbaa in his analysis of the faunal remains.

Cut and saw marks on pig remains indicated that the head was detached near the upper cervical vertebrae. The rear limbs were removed by breaking the innominate at the acetabulum, and the distal humerus/radial-ulna joint seems to have been the most difficult to separate due to the number of cut, hack, and saw marks on the bone, particularly on the proximal portion of the radius and ulna. (Cumbaa personal communication 1974).

Identifiable skeletal elements of pig recovered at the site included portions of the skull, the vertebral column and ribs, the front limbs, the pelvis and the rear feet.

The cow remains also yielded evidence of butchering techniques. Cut and saw marks indicated that the head was broken open, the front limbs disarticulated and the lower limbs severed at the humerus/radius-ulna joint in the same manner as the pig. The rear limbs were removed by breaking the pelvis at the acetabulum. Rib sections were sawed through distally and cut proximally, and meat was cut off the top of the thoracic

region. The rear and front feet appear to have been cut off, and in the case of the front feet, may have been discarded intact, as most of the elements of at least one animal were well preserved (Cumbaa personal communication 1974).

Butchering techniques were not discernible for white-tailed deer, since no cut marks were present on the bone remains. White-tailed deer elements present included teeth, phalanges, an ulna and a lumbar vertebra.

Large mammals certainly provided a source of protein at the site, although the frequency of acquisition or use of these animals is unknown. More commonly used, and ubiquitous in closed contexts were smaller animals such as fish and molluscs. These locally collected resources probably provided the base for the de la Cruz household diet.

With the exception of the cartilaginous fishes (sharks and sawfish), which were all small individuals of types known to venture frequently into bays and coastal rivers, all of the fish species from the site were inshore, shallow water marine fishes common in the inland waterway around seawalls, pilings, docks, and oyster beds. Most of these were probably caught with hooks and lines, except for the mullet which were probably netted.

Fifty-nine percent of the bony fish remains were from catfish, with mullet the second most numerous species. This is not unexpected, since these are the most commonly caught fish in St. Augustine today. Preservation was quite good for fishbone, suggesting again that these were prepared in soups or stews.

By far the most frequently encountered food resources were molluscs, particularly the eastern oyster (*Ostrea virginica*). These were ubiquitous throughout the site. The total mollusc population from one sub-midden trash pit (Feature 28) along the north end of the kitchen was recovered and analyzed. This pit contained 476 individuals: 448 of these were oysters, inhabitants of brackish, shallow, tidal waters. The oyster was a basic food resource in Spanish St. Augustine, judging from the very large numbers and their total ubiquity in Spanish period sites, which is a direct carry-over from prehistoric and aboriginal historic subsistence patterns. The presence of numbers of very small oysters suggests that overharvesting of this resource may have occurred.

Other molluscs in the feature included ten Northern Quahogs, (*Mercenaria mercenaria*) which are hand-collected in shallow, soft-bottom tidal waters; and 14 tagelus, which are abundant in shallow water sandy mud. All of these mollusc species occurred throughout the site, in addition to the pit which was analyzed.

Table 3 also lists the birds indentified at the de la Cruz site. Three of these species, the chicken, turkey, and the Mexican Thick Knee were probably introduced to St. Augustine from other parts of New Spain by the Spaniards. All of the other species are inhabitants of coastal marshes or streams, and all but the dowitcher are winter residents of the area. (The dowitcher is found in Florida in the spring and fall.) With the exception of the Thick Knee, which is discussed below, all of these birds are edible, and were probably used as food resources at the de la Cruz site.

The floral and faunal remains from the site suggest a pattern of coastal adaptation conforming closely to the prehistoric aboriginal coastal adaptation in the area (Deagan n.d.). A heavy dependence on fish, shellfish, and small marsh animals was modified by occasional use of domestic, introduced animals such as pig, cow, chicken, and turkey. It should not be assumed that the typical colonial subsistence pattern would be based on an adaptation to available, local resource. This was not the case for the inhabitants of the Hawkins-Davison house at Fort Frederica, Georgia (occupied at approximately the same time as the de la Cruz site), who depended primarily on introduced, domestic mammals for food, and did not adapt to the Georgia coastal resources (Deagan 1972). Given the poverty of the colony at St. Augustine, the lack of success at farming, and the erratic nature of the situado, it would not be surprising to find that the pattern of diet found at the de la Cruz site was typical of St. Augustine as a whole. Since almost no comparative data is available, however, the subsistence pattern at the de la Cruz house will be suggested as the pattern typical of a mestizo household, to be supported or disproved by further zooarcheological testing. Possibly Spanish or criollo families had easier access to cattle or other domestic animals, or a disinclination to coastal collecting of food resources. This problem is being currently studied by Mr. Stephen L. Cumbaa of the Florida State Museum in Gainesville, Florida.

Child Care Related Activities

Very few material correlates of child care activities were found

at the de la Cruz site, and these included only toy and game activity items. From closed 18th century contexts, seven sherd discs, two marbles, and a child-sized thimble were found, all from the kitchen building (Figure 17).

The marbles revealed no Spanish-Indian admixture, since both were obviously of European origin. One was made of mottled brown and white, hand-molded glass; and the other was of white marble. Stone and glass marble production reached a peak in Europe at about 1740, and declined through the 19th century (Randall 1971:102-105). Their presence under the tabby floor in the kitchen building indicates that the Spaniards were importing toys to St. Augustine, although their place of manufacture is unknown.

Also of European origin was a very small brass thimble, suited to the hand of a child. (The possibility that this may have been a fourth-finger thimble was rejected on the grounds that such a thimble would have no functional use in sewing.) This item indicates that not only were European play items being used by children in mestizo households, but also that a European method of women's activity (sewing) was being passed presumably from Indian mother to mestizo daughter, in a tradition probably typical of nearly all cultural groups.

The sherd discs were all examples of aboriginal-European admixture. All seven of them were recovered from within the kitchen building from closed contexts, and all were made from European potsherds. Five of these were Olive Jar fragments and two were of majolica, ranging

in size from 1.5 to 6.5 centimeters. Several such discs made of English slipware were recovered from mixed occupation zones.

These sherd discs occur widely on prehistoric sites, and are usually interpreted as gaming discs, probably for both children's and adult's games. During the Spanish colonial period these discs also occur commonly made of European ceramics, possibly made by Europeans as gaming pieces, adopting aboriginal techniques, or by Indians, adopting European ceramics which were often more colorful and durable. Nothing is known of the function of sherd discs in aboriginal times, so it cannot be determined whether the use of the discs in historic times was aboriginal or European, although probably both occurred. Their presence in only the kitchen, a women's activity area, does not shed light on the function of the discs, since they could have been used as playthings by children as their mothers worked, or as gaming/gambling discs by the women using the kitchen.

Male Activities

House Style and Usage

Figure 3 shows the architectural elements of the de la Cruz lot; two houses, two outbuildings and four wells, enclosed on the south side by a wall. The front (east) of the lot, which would have been on the street in colonial times, was covered by the modern paved road so that evidence for a street wall between the houses was not present. Walls surrounding Spanish homes in St. Augustine were the rule; John Bartram noted in 1765 that most of the garden and yard walls were built of "oyster shells

and mortar" (tabby) (Manucy 1962:131). The de la Cruz garden wall footing was of tabby, poured into a trench of a uniform depth. This footing measured from 65 centimeters to 90 centimeters in width at various points, probably due to differential preservation rather than variation in the actual wall width. A unique feature of this garden wall is its role in the formation of the west and south walls of the kitchen building (Figure 3). This was an economical use of building materials, especially since the north wall of the kitchen apparently doubled as the south wall of the outbuilding to the north of the kitchen. This particular wall formation also suggests that the kitchen may have been added after the construction of the garden wall.

The kitchen building appears to have been divided into two sections, as evidenced by a tabby wall footing near the center of the building, and several aligned postholes across the building at this point. It was also apparent that more intensive activity took place in this portion of the building, and it was suggest above that the north portion of the kitchen may have been only partially walled.

The houses, which were excavated in 1972, were both of a two-room floor plan, although the north house was of the style known as the St. Augustine plan (Manucy 1962:55). This is a house plan particularly suited to the St. Augustine climate; and a characteristic of the Spanish criollo culture. The St. Augustine plan consists of two rooms side-by-side, either single or double storied. On either the south or the east side of the house a sheltered porch or loggia was constructed, which was

warmed by the sun in the winter, and cooled by the prevailing easterlies (sea breezes) in the summer.

The foundations of the north house at SA-16-23 were poured tabby footing varying in width from .6 feet to 2.0 feet, and averaging 1.5 feet. This was constructed by pouring tabby into a trench with slightly sloping sides. The two rooms formed by the footings and the partition were 15 feet square on the interior, and were probably lower-story rooms (C. MacMurray n.d.). The width of the footing (18 inches) suggests a two-story structure, since the standard wall thickness for one story was one tercia (11 inches), and for two stories was one and one half tercias (17.5 inches) (Manucy 1962:67).

The exterior walls of the north house were of coquina blocks mortared to the tabby foundation; and the interior partition was constructed by the ostion y poste technique, which involved posts set into the poured tabby for strength or tabby poured around set posts (Manucy 1962:69). The loggia of the north house was located on the south side, and was represented archeologically by a series of postholes describing a rectangle 18 feet (east to west) by eight feet (north to south). The entrance to the house, archeologically discernible as a gap in the south footing, was believed to be through the loggia. The presence of red earthenware barrel tile indicated that the house was roofed with this material, or else had a flat tabby roof with barreltile drainpipes (see Manucy 1962:113). A portion of tabby floor was found in the west room, and it is believed that the entire house was floored originally with tabby (MacMurray n.d.).

The south house was partially obliterated by the paved road to the east, and the construction of a later Minorcan house to the west of the road rendered the original width indeterminable. This house also had tabby footings with mortared coquina block walls. It was five feet longer than the north house, and also contained a partition. Using the ratio of width to length for the north house (15:30) as a guide, a projected width of 17.5 feet may be suggested for the south house. The two interior rooms were of uneven size; the north room being 21 feet long and the south room 13 feet. The footing width (1.8 feet) indicated that this house also was two-storied.

Fugitive evidence for a loggia was recovered to the west of the house, although subsequent construction in the area had obscured the archeological picture considerably (House data after C. MacMurray n.d.).

Few items of building equipment or hardware were found at the site; wrought nails were by far the most numerous of these items from closed Spanish period contexts. Of the 329 nails from closed contexts, 51 were found in the kitchen building, 75 nails in the midden behind the kitchen (although 62 of these were from the well), 36 were from the courtyard, and 167 came from the north outbuilding. The clustering of the nails in the outbuilding, even though this was the smallest provenience in the area, supports the cartological evidence that there was a wooden building here (Jeffries 1762). Most of the nails were highly oxidized, but all of those which were identifiable from closed 18th century contexts were hand wrought (Figure 18). A number of wrought iron spikes were also

recovered (Figure 18), one from the kitchen building, one from the courtyard, 13 from the well behind the kitchen and eight from the outbuilding to the north of the kitchen.

Other building hardware from closed contexts at the site included 11 brass tacks, an iron ring, and one large iron staple (Figure 18). From the well behind the kitchen, the vertical portion of a large iron pinion hinge was recovered (Figure 18). The tapered end of the hinge was chisel-notched to produce a serrated effect on two edges, which undoubtedly acted to secure the hinge more firmly onto the post or wall. Few brass objects were recovered; one fragment of a bracket, from a wall candle sconce, a clasp or a handle, and a brass latch piece were found, along with a small piece of ornamental brass, probably from a book clasp or small piece of furniture (Figure 19). The single key portion recovered from a closed context was of iron, and was probably fitted to a large padlock.

The only other building material noted from closed contexts were fragments of flat earthenware tile, most probably used for roofing. This tile was recovered from the midden, courtyard, and kitchen areas, and may have been used on the south house and kitchen building, since the north house area yielded barrel tile rather than the flat earthenware tiles. These tiles were square or rectangular (no intact examples were found) of a soft, red earthenware which often contained clay or limestone tempering, indicating that these were locally made. The average thickness of the tile fragments was three centimeters.

The picture of the lot and construction techniques which emerges from the archeological evidence is a totally European one. No evidence of aboriginal building materials, such as thatch or wattle and daub was present, and no evidence of aboriginal tools. The only possible exception to this is the hypothetical, semi-walled north half of the kitchen, which may have had a thatch roof, although there is no direct evidence of this.

What is suggested is a lot enclosed by a high coquina wall with a tabby footing, containing two St. Augustine plan houses, double storied and roofed with either barrel, or flat earthenware tiles. Behind the south house stood a separate kitchen building, with coquina block walls on a tabby footing, and possibly only partially walled on the north half. Adjacent to the kitchen was a wooden outbuilding, and wells were behind the kitchen and in the courtyard. The focus of activity seems to have been in the courtyard area between the south house and the kitchen.

Military-Political Activity

Material evidence of military-political activity at SA-16-23 was restricted to items of military origin or function. Of these, gunflints were the most numerous, although of the eight gunflints recovered at the site, only three were from closed contexts, and the others were from mixed occupation zones. Of these flints, three appeared to be British flints (Figure 20) and were dark grey, prismatic flakes produced by a blade technique. Three were honey-colored French flints, and two were the wedge-shaped flints attributed by Witthoft to Dutch origin

(1966:25). The flint recovered from the well behind the kitchen was a "dutch" flint, made of a waxy, pearl-grey flint (Figure 20), and may have been of Spanish origin. Although Witthoft asserts that the wedge-shaped flint is a Dutch product, it has been shown that these wedge-shaped, "Dutch" flints were being manufactured from ballast rock by British soldiers at Fort Frederica, Georgia, at around 1740 (Deagan 1972). The presence of this gunflint style in a Spanish context, made of a material not typical of the dark grey flint used in Dutch production, suggests that the wedge style was a common type of the 18th century, produced by soldiers of many nationalities.

Three worked pieces of stone (one of coral native to Florida) apparently were used as strike-o-lights (Figure 20). Two of these were pale grey, and the coral example was white; and all appeared to be re-worked gunflints. Several miscellaneous chunks of worked chert were also present, and attempts may have been made by Spanish or criollo soldiers to use local chert for their gunflints. Of the 39 fragments of worked stone found in closed contexts, 72 percent came from the courtyard, designated in Chapter III as a male activity area.

Five gunflints from closed contexts were selected for petrographic thin sectioning, which could be magnified and photographed to shed light on the origin of these flints. Analysis by Dr. F. N. Blanchard of the University of Florida Geology Department indicated that the grain structure of the flints from SA-16-23 was considerably smaller than the grain of Florida chert similarly analyzed (Purdy and Blanchard ms)

and appears unlike Florida material. (See Appendix IV for Blanchard's full analysis and photographs.)

It is indicated that while attempts may have been made to use local materials for flints, these attempts were not successful (with the single exception of the coral example), or that the final products were not used which supports the test implication that male activities will show little Spanish-Indian admixture, but were primarily European.

Gun Hardware

Gun hardware from closed Spanish contexts included a brass sideplate from a musket, two buttplate pieces, a rear ramrod tube and two musket trigger guards (Figure 21). The side plate, found in the well behind the kitchen was from a regimental Spanish musket of 1752 issue (Brinkerhoff and Chamberlain 1972:34). This brass piece was ornately incised in a floral pattern, similar to the pattern on a fragment of a side plate recovered by Hale Smith at Santa Rosa Pensacola (1965:119).

From the well in the courtyard, a nearly whole brass buttplate with a "B" stamped on the interior was found (Figure 21). Other brass gun hardware included a portion of a trigger guard, incised on the edges with a row of inverted "v's", and a ramrod tube with a small, drilled hole in the side (Figure 21).

Portions of two very badly corroded iron trigger guards were also recovered.

There was no evidence for aboriginal flint weaponry or tools at the site, which would have been greatly less efficient than the Spanish

counterparts, and were therefore not to be expected on a Spanish or mixed Spanish-Indian site. The excavation data was found to strongly support the test implication that male activities would be primarily European.

Pipes

Kaolin pipestems numbering 210, and four intact bowls were found at the site, and will be discussed as a correlate of male activity, although smoking of tobacco was probably not restricted to men. The pipes, however, were clustered in the courtyard, which has been suggested (above and Chapter III) as a male activity area:

	<u>Stems</u>
Kitchen	23
Courtyard	107
Outbuilding	14
Midden	55
South house	2

The use of the stems in dating the site is discussed in Appendix II. No evidence of Indian pipes was recovered at the site, instead, the pipe remains indicated that smoking equipment from several European countries was being used. From closed 18th century contexts, seven pipe fragments bearing marks or insignia were found (Figure 22). Three of these were of English origin, one bowl with a TD mark both on the spur, and in a cartouche on the bowl, which was probably the mark of Thomas Davis, whose pipes occurred in the New World at around 1750 (Atkinson and Oswald 1969:206-207). Two pipes bore the mark WG on the sides of the spur, which was a fairly common mark, attributable to several London pipemakers and believed to date between 1680 and 1780 (Mark 1968:43).

Four pipe fragments were of Dutch origin and were recovered from closed contexts. Two of these were partial bowls bearing a crowned 15 on the spurs. The use of numbers and crowned numbers on pipe spurs during the 18th century was a Dutch trait (Omwake 1965:42), and similar specimens bearing a crowned 16 were recovered at the site of Santa Rosa Pensacola (Smith 1965). Other examples of white clay pipes with crowned number insignia were recovered from the fortress of Louisberg, Canada, from a context dated 1755-1760 (Walker 1971:92-93). Molded, rouletted stem fragments from Louisberg, dating there from between 1716 and 1750, were very much like examples from closed contexts at the de la Cruz site (Figure 22).

One pipebowl from SA-16-23 bears the unidentified mark of a crowned fish under the inscription "HVDO." This is probably a Dutch mark, possibly a Gouda pipemaker, and can safely be attributed in St. Augustine to the period 1720-1760.

Another stem fragment was glazed with a yellow slip, and was associated with only Spanish material and San Marcos pottery. Since this pipe feature is not commonly noted on British colonial sites, this may be an example of a Spanish pipestem. It seems in general, however, that British pipes, and occasionally Dutch pipes were typically used in 18th century St. Augustine.

Crafts of Women

Of the female craft activities hypothesized for the de la Cruz site, evidence was recovered only for sewing and pottery making.

Evidence for basketry would be difficult to demonstrate archeologically, since the organic materials used in basketry would be highly perishable, and the southeastern United States tradition of twilled, woven basketry (as opposed to coiled basketry) would probably preclude the presence of awls. The same restrictions on recovery would be true of weaving materials, and the absence of any loom elements suggests that if weaving was being done at the de la Cruz site, it was hand weaving, and not introduced loom weaving.

Sewing

Sewing and mending equipment from 18th century contexts on the site included thimbles and pins. A total of ten brass straight pins and six brass thimbles were found at the site, with five pins and three thimbles from closed 18th century contexts. All of these items from closed contexts occurred in the kitchen building. The whole pins were two centimeters in length, and had spherical heads with a single groove across the center, indicating a wrapped technique for making the head (Figure 23). The thimbles were of thin, embossed brass (Figure 23). No items of aboriginal sewing equipment, such as awls, punches, or bone needles were recovered at the site, and it is apparent that this area of female activity reveals a complete adoption of European clothing by this mestizo household, and by the adoption of European sewing and mending equipment. This does not refute the test implication that crafts of women would be primarily Indian, or show Indian-Spanish admixture, for when sewing equipment is viewed as an adjunct of clothing it is included in the

category of socio-technic items (see Chapter II), and would be expected to show European form and function.

Pottery Making

In the courtyard of the lot, several concentrations of unfired, white clay were found, which may have represented the making of pottery on the site. When fired, this clay was very hard, with a high kaolin content. The nearest source of this kind of clay is some ten miles south of the town at Crescent Beach, Florida (Personal communication; Street Urchin Pottery; St. Augustine, Florida 1973). Although no remains of paddles or forms were found at the site, the presence of this clay at the base of the colonial midden, in concentrations of about ten ounces to just over a pound speculatively suggests that local pottery was being made in individual households, possibly Indian or mestizo households, in 18th century St. Augustine, particularly since there is no record of a pottery kiln in the city at this time.

Crafts of Men

Flintwork, bonework, woodwork, trapping, hunting, and fishing were hypothesized as male crafts for which evidence of Spanish-Indian admixture might be found. Of these, archeological evidence for flintwork, fishing, and bonework was found; although no tools for any of these activities were recovered, rendering the designation of the craft technique origins difficult.

In addition to the gunflints and strike-o-lights discussed above, 69 fragments of worked flint were recovered from the site, Like the

pipestem fragment, these were clustered in the courtyard:

kitchen	13
courtyard	36
outbuilding	6
midden	12

Of these, nearly one-third appeared to be of Florida chert (Dr. Barbara Purdy, personal communication, Gainesville, Florida 1974), indicating an attempt to use local materials, although these attempts were apparently unsuccessful judging by the absence of any finished items of this material.

While no evidence of trapping was found, four lead fishing weights indicated the use of Spanish fishing equipment at the site, particularly the use of weighted nets. The species list for fish, however, suggests that at least some fishing was done with a line, which would have less chance of being recovered archeologically than metal fishing net weights.

The absence of any flint tools or weaponry indicates that hunting and butchering was done primarily with European tools (guns, knives, saws), which would have been much more efficient than aboriginal flint equipment.

No direct evidence for woodworking or bone carving was found at the site. One bone knife Handle was found, incised with diagonally hatched lines, but since similar examples have been found on several St. Augustine sites, their manufacture, and craft implications cannot be attributed to the de la Cruz site.

Socio-Technic Items

The test implication that socio-technic items would be European was firmly supported by the data from the de la Cruz site. These items included ornaments, clothing, cosmetics, and tableware.

Ornaments: Beads

Thirty-four beads were found at the de la Cruz site during the 1973 season, in addition to the 35 beads recovered in 1972. Without exception, these beads were of European origin; no shell or stone beads attributable to aboriginal manufacture were present.

Of the 34 beads from the 1973 excavation, 14 were from closed first Spanish period contexts, and as a result, can be definitely attributed to the period between 1720 and 1763 (Figure 24). Table 5 lists the 35 beads and their proveniences, along with their classification according to the Kidd classification system (Kidd and Kidd 1970). The Kidd system was chosen for its flexibility, an important factor for the classification of the SA-16-23 beads, since some of these did not conform to the previously described bead collections upon which the Beck (1928) and Kidd systems were based.

Of the beads from closed contexts, eight were wire-wound, and four were cane or tube beads. (The remaining bead was a rosary bead, described below.) Within the entire sample of 35 beads, however, 16 (49 percent) were cane beads, and of the 35 beads recovered in 1972, 33 percent were cane beads, and the remainder were wire-wound.

The most frequently occurring bead types at SA-16-23 were

Cornaline D'Allepo trade beads; and a blue cane bead with white appliqued stripes. The Cornaline D'Allepo beads are tubes of dark green glass, covered by opaque red glass, varying considerably in size (Figure 24-h). Eight of this variety were recovered in 1972, and three in 1973, although none were found in closed contexts during the 1973 excavation. The seven blue tube beads with white appliqued stripes were all found during the 1973 excavation (Figure 24-i), although only three were from closed Spanish period contexts.

Six wire-wound, faceted beads were recovered at the site, two from closed contexts (Figure 24-1). These are not accounted for in the Kidd system, and have been designated as WIIe. They come closest to the illustrated type WIIc, but are more nearly spherical. These faceted beads are quite similar to decahedral beads such as the Tallasseehatchee Translucent Amber Decahedral bead (DeJarnette and Hansen 1960:58), and those found at Santa Rosa Pensacola (Smith 1965:100-101).

One particularly interesting bead from SA-16-23, also from a closed 18th century context, was a jet "rosary bead" (Figure 24-7). This bead is flat on one side, and faceted on the other, with two holes drilled latitudinally through the sides. An identical bead, designated as a rosary bead, was recovered at the Los Adaes site (16-NA-16), the site of the Spanish Linares mission, occupied from 1707 until 1805 (Gregory and Webb 1965:16).

Because glass beads are often either not reported, or are usually scarce on Spanish sites, comparison or generalization about Spanish

TABLE 4Beads from SA-16-23Closed Contexts

<u>Number</u>	<u>Description</u>	<u>Provenience</u>	<u>Kidd Type</u>
1.	wire-wound, blue faceted	midden	WIIe3
2.	tube, blue, white stripes	courtyard	I Ib70
3.	tube, blue, white stripes	courtyard	I Ib70
4.	wire-wound, black, oval	well	WIcblack
5.	wire-wound, amber, donut	well	WI d2
6.	wire-wound, clear, raspberry	courtyard	WIIel
7.	jet rosary	courtyard	none
8.	wire-wound, white, round	courtyard	WI b2
9.	tube, blue, white stripes	courtyard	I b25
10.	wire-wound, patinated, round	courtyard	WI bpatinated
11.	wire-wound, blue faceted	courtyard	WII f5
12.	tube, opaque blue	courtyard	I aI8
13.	wire-wound, patinated round	courtyard	WI bpatinated

(See Figure 24 for illustration of above beads.)

Mixed Contexts

14-16.	Cornaline D'Allepo	open	IIIaI
17-20.	rounded tube, blue, white stripes	open	I Ib70
21.	seed, rounded, white	open	
22.	wire-wound, blue, faceted	"	WIIe3
23.	wire-wound, clear raspberry	"	WIIel
24-25.	wire-wound, clear, faceted	"	
26.	wire-wound, black, round with	"	
	white "dot" inlays	"	WII Ib
27.	wire-wound, black, round	"	WI bI7
28.	tube, blue, opaque	"	I aIb
29.	tube, blue, transparent	"	I aIa
30.	wire-wound, blue, round	"	WI bI5
31.	wire-wound, blue, flat-circular	"	WII bI
32.	wire-wound, white, round	"	WI b2
33.	tube, chevron	"	IIIaI
34.	seed, chevron	"	IIIaI seed

use of beads is difficult. Only 11 beads (excluding 39 beads found strung on a rosary) were recovered at the sites of San Luis and San Francisco combined, and except for five incompletely described striped beads, these were all plain beads (Boyd, Smith and Griffin 1951:176). The seven glass beads recovered at the 18th century site of Santa Rosa Pensacola are similar to some of those from SA-16-23; two faceted wire-wound beads (Kidd WIIe2), one elongated, faceted bead, one Florida Crystal faceted, one striped tube bead, and one Ocmulgee White Inlay (DeJarnette and Hansen 1960:57) were found.

The Los Adaes site in Louisiana (Gregory and Webb 1965) yielded 65 beads, believed to date from 1717 to 1805. The sample from this Spanish site diverged from the bead samples from the three surrounding French sites in two ways:

1. The Spanish site contained a great many more seed beads than the French sites, and the beads in general were smaller at the Spanish site.
2. Wire-wound beads were much more frequent at Los Adaes than at the French sites.

From burials at the Childersburg site, 29 beads, attributable to the period between 1750 and 1775 were recovered. Of these, 21 were small, undecorated tube or seed beads. Of the remaining eight, four were faceted decahedral beads, two were "pigeon egg" trade beads, one was a fine inlaid oval bead, and one was a large black cylindrical bead (DeJarnette and Hansen 1960:59). These were associated with Indian burials containing British trade goods.

Although nearly all of the beads on 18th century sites, whether French, Spanish, or British, were probably imported from Amsterdam or Venice (Noel-Hume 1970:53), certain tendencies may be suggested for an 18th century Spanish-Indian domestic site, represented by SA-16-23:

1. Wire wound beads are preferred to tube beads on domestic sites.
2. Fewer seed beads are present on domestic sites than in mission or frontier sites. This may be due to the use of seed beads for Indian trade, to be sewn on garments or used in other beadwork, and may have been considered undesirable by town dwellers (particularly those trying to dissociate themselves from Indian-ness). Archeological recovery techniques should also be considered as a possible determining factor.
3. A higher proportion of complex, decorative beads (appliqued, inlaid and multicolored beads; or beads of complex shape) are found on Spanish domestic sites than on mission or frontier sites. The basis for this suggestion is in the proportion of decorative to non-decorative beads at several 18th century sites:

	<u>decorative</u>	<u>total</u>	<u>% decorative</u>
SA-16-23	18	34	52
Santa Rosa Pensacola	7	7	100
Los Adaes	4	65	7
Childersburg	7	29	20
San Luis & San Francisco	4	11	36
Fig Springs Mission*	1	16	6
Arrivas House** (St. Augustine, Florida)	4	10	40

*Deagan 1972b

**Florida State Museum Field Notes

The three domestic sites, SA-16-23, the Arrivas House, and Santa Rosa

Pensacola, have the highest proportions of decorative beads.

The three statements presented above should be treated as inductive hypotheses requiring further testing before their validity can be determined.

The role of beads as a material correlate of mestizaje is unclear at this point. Certainly a higher proportion of decorative, European beads; or at least beads not primarily associated with Indian trade, is to be expected. Comparison of the de la Cruz site with the Arrivas site (SA-12-12), occupied by a Spanish criollo household at about the same time that the de la Cruz site was occupied by a mestizo household, suggests that a greater number of Venetian glass beads may have been used by the mestizo household. The excavation at the Arrivas house yielded only ten beads; two faceted, two wire-wound glass, one tube bead, and one blue tube bead with white appliqued stripes, and an Italian coral bead. (Florida State Museum Field Notes). It is possible that acculturated Indians and mestizos displayed European glass beads more prominently than did Spaniards or criollos. It should be noted that the individual economic factors of the households, as well as the recovery techniques employed at the sites, may also be relevant factors, and that further archeological testing is required.

Ornaments: Buttons

The buttons recovered at SA-16-23 provided direct evidence that European clothing was worn on the site during the first Spanish period. The 1973 excavation recovered 85 buttons, 25 of which were from closed 18th century contexts.

Of these 25 closed context buttons, 15 (nearly 65 percent) were of bone. Single-hole bone buttons were the only type found in quantity at the site, since the metal and shell buttons (Figure 25) represented a wide range of styles. The buttons shown in Figure 25 may be considered as firmly dating between 1720 and 1763. They closely resemble the button assemblage described by South for Brunswick Town (1964) which dates from approximately the same time (1726-1776).

Closed Context Buttons

Button #1--Six-sided octagonal brass: the shank is cast in one piece, resembling South's Type 1, and Olsen's Type A (1963:553).

Button #2--Hollow-domed, two-piece white metal button. The back is broken, so method of fastening is indeterminable. Probably most closely resembles South's type 6.

Button #3--Flat shell button incised with a five-pointed star and cross-hatching; containing a brass centerpiece. This has no counterpart in the types described by South or Olsen, and is possibly of Spanish origin.

Buttons #4,5--Plain, white metal buttons with spun backs, and brass eyes set into a foot on the back.. These are similar to South's Type 7 and Olsen's Type D.

Button #6--Hollow, brass button with raised floral design. It has a brass wire eye cast in place similar to the style of small sleeve buttons recovered at Williamsburg in a 1660-1720 context (Noel-Hume 1970:89).

Button #7--Small brass button, dome shaped, with a missing back which was probably of bone. It does not resemble any of the types described by South or Olsen, although there is a suggestion of a cast shank at the

back, as in South's Type 1 and Olsen's Type A.

Button #8--Made of undecorated, thin sheet brass, and was crimped around a backing at one time. It resembles South's Type 15.

Button #9--This button's back is made of four-holed bone, fronted by thin brass, as in South's Type 3 and Olsen's Type B, although it is badly corroded.

Button #10--This thin, silver-plated button is decorated on both the front and the back. The front bears a basket-weave or herringbone incised design, while the back has a crude shank foot surrounded by a laurel wreath design. Although it does not resemble the types described by South or Olsen, it was found in a closed Spanish period context at SA-16-23 (as were all of the buttons used in analysis). Since silverplating was not used until 1750 (Noel-Hume 1970:90) the button probably dates from between 1750 and 1770. A similar design pattern was found on a button from Santa Rosa Pensacola (Smith 1965:72).

Bone Buttons

All of the bone buttons recovered from closed contexts were of the single-holed variety, similar to South's Type 15. These buttons were commonly used as forms for fabric-covered buttons, or as backing for metal or shell button fronts (Robert Harper, personal communication, Art Historian, Historic St. Augustine 1974). The buttons from SA-16-23 ranged in size from one centimeter to two centimeters in diameter, with central perforations of 1.5 to three millimeters in diameter. These discs were made with the smooth, outer bone surface as the exterior of

the button, and the porous, inner surface of the bone on the button interior.

Although all of the loose bone discs were from single-hole buttons, button #9 indicates that four-hole button backs were being used during the 18th century, although certainly not frequently. The single-hole bone button persisted at the site through the 19th century, and this was still the most common type in three 19th century trash pits, dated on the basis of stratigraphic position and ceramic content. It was noted, however, that carved, offset rims were present only in 19th century contexts, and that four and five-hole buttons were also frequent in 19th century contexts. It would appear from this that bone was used only for button frames or backs in the 18th century at the site, and was not carved as a complete button until the 19th century.

There is no evidence for button making in St. Augustine during the Spanish period, and it is most likely that the buttons other than bone from SA-16-23 were imported. Some of these were probably British imports, since it is known that "cloth and dry goods" were imported from Charleston during the 18th century (Harmon 1969:83). Many of the buttons also closely resemble the buttons from Brunswick Town, believed to date between 1700 and 1765 (South 1964). Buttons 1, 4, 5, and 9 are probably British. Button 7 closely resembles the buttons recovered from the plate fleet wreck of 1733 (UFAL), and is believed to be Spanish; and Buttons 3, 7, and 10, because of their unusual appearances, and lack of comparable types from British sites, are also believed to be Spanish.

The nature of the closed proveniences from which the buttons were recovered firmly dates them between 1720 and 1763, verifying the dates of the same types from Brunswick Town and other colonial sites.

Ornaments: Buckles

Twelve brass and iron buckles or buckle fragments were recovered at SA-16-23, six of these from closed 18th century contexts. These buckles are illustrated in Figure 26.

All of the buckles appear to be garment rather than harness buckles. Although the buckles designated as closed context items can be reliably dated between 1720 and 1763, the other buckles all came from midden zones which contained predominantly 18th century material, and these probably date from the 18th century also.

The buckle assemblage bears resemblance to those of both Williamsburg (Noel-Hume 1970:84-86) and Santa Rosa Pensacola (Smith 1965:115). A common form was a flat, rounded rectangle of brass at both the de la Cruz site (buckles 2, 9) and at Santa Rosa (Plate 30: i, j, o, p, cc). Rosettes were a popular motif at Williamsburg (Noel-Hume 1970:Figure 20), and two buckle examples from the de la Cruz site were adorned with this rosette design (1, 3).

Other Fasteners

The only other clothing fasteners found at the site were six hooks and four eyes, made of brass. None of these was found in a closed 18th century context, however, and are believed to date from the 19th century.

Ornaments: Other

Other than beads, buttons and buckles, only one other item of ornamentation was found in a closed context at the de la Cruz site. This was a carved ebony pendant in the shape of a figa, an African magical symbol of fertility and good luck (Figure 27). These amulets were a common feature of 18th century Brazilian-African culture, used by slaves and mixed bloods to ward off evil spells and sickness (Freyre 1964:412). They are also known to occur in other parts of Latin America, and may have been introduced to St. Augustine by the criollos or mestizos of New Spain. While it is not known whether the meaning of the item was introduced along with the amulet itself, the presence of the figa at the de la Cruz site offers a provocative indication that magico-religious symbols of New World Latin American mestizo culture were introduced to and adopted by mestizos in 18th century St. Augustine.

One fragment of a small bone comb was found at the site, which appeared to have been the double-tooth comb variety used widely throughout Europe and colonial America during the 17th, 18th, and 19th centuries (Noel-Hume 1970:174). This was a crude comb form, rectangular in shape, and having teeth at opposite narrow ends. The example from the de la Cruz site was small (three centimeters wide), and may have been used for holding a coiffure in place as well as for simple combing. It has been included with socio-technic items as indirect evidence of conformity to a European style of hairdressing. During the 1972 excavation, a portion of a bone hairbrush head was found in association with a pair of scissors,

behind the south house; which also suggests European hairdressing (MacMurray n.d.).

The absence of any type of jewelry at the site was unexpected. Poverty does not seem to be a reasonable explanation, since the rest of the material assemblage from the site implies a comfortable existence, and items of jewelry have been recovered from poverty-stricken mission sites, as well as in comparatively large numbers from Santa Rosa Pensacola (Smith 1965:111). The preference for glass beads over other kinds of European jewelry (pendants, rings), or the lack of access to these items should be considered as a possible material correlate to mestizaje. It should also be considered that church sumptuary rules may have been in effect, which limited the use of jewelry by women in 18th century St. Augustine.

Tableware

Tableware ceramics have been included in the category of socio-technic artifacts as a publicly visible item in a household's material culture. It was therefore hypothesized that tableware would be of European ceramics rather than of aboriginal or colono-Indian wares, and this was found to be true of the de la Cruz site.

The ceramic types designated as tablewares at SA-16-23 included Spanish Majolica, Delftware, Slip-decorated Earthenwares and a number of refined earthenware types of British origin. [All types conform to and follow those described by Ivor Noel-Hume (1970), and John Goggin (1968)]. The function of these ceramics as tableware was determined primarily

through an analysis of form, and to a lesser extent, by distribution in the site. Table 6 shows the distribution of these wares throughout the site, and it can be seen that the highest concentration of tableware ceramics occurs in the kitchen area, and in courtyard trash pits; conforming to the food preparation area pattern discussed above. The portion of the south house excavated in 1972 yielded very few European ceramics, and this tends to support the suggestion that this was not a food preparation or consumption area, a suggestion originally derived from the abundant presence of San Marcos ceramics and the total absence of fire pits, food remains, or sooting on the pottery. It should again be noted, however, that differences in sampling and recovery techniques between the 1972 and 1973 excavations make comparison of data difficult, and at best, tentative.

While the predominant form of the San Marcos ware was that of a deep, globular bowl, undoubtedly used for cooking, the European ceramic forms from the site were all serving or eating vessels. These will be discussed specifically within each ceramic category.

Spanish Majolica

Spanish Majolica accounted for approximately three percent of the ceramics from closed 18th century contexts. This tin enamelled earthenware was imported to Florida during the Spanish colonial periods, and functions as a marker for these occupations. All majolica types discussed for the de la Cruz site conform to the descriptions in Goggin (1968).

The de la Cruz site provides material from closed contexts, which

TABLE 5Distribution of Tableware Ceramics

	<u>Kitchen</u>			<u>Courtyard</u>			<u>Outbuilding</u>			<u>Midden</u>		
	*A	B	C	A	B	C	A	B	C	A	B	C
Majolica	41	3.5	36.2	61	2.8	53.9	8	1.3	7.0	3	.4	2.6
Delftware	51	4.4	32.2	81	3.7	51.2	16	2.7	10.1	10	1.5	6.3
Slipware	33	2.8	25.3	78	3.6	60.0	8	1.5	6.1	11	1.6	8.5
Refined Earthenware	101	8.7	38.2	135	6.3	51.1	17	3.1	6.4	11	1.6	4.1
Total	226			355			49			35		

*A -- Number of Sherds

B -- Percent of all ceramics within provenience

C -- Percent within the ceramic type

TABLE 6Majolical from Closed Contexts

	<u>Kitchen</u>	<u>Courtyard</u>	<u>Outbuilding</u>	<u>Midden</u>	<u>Total</u>
San Luis Polychrome	6	9	3		18
Sebla Polychrome	5	8			13
Sebla Blue-on-White	1	9	1		11
San Augustin Blue-on-White	6	6	1		13
Panama Polychrome	3	4	1		8
So Polychrome	4	1			5
Main White	5	6			11
Cilla Polychrome	2	1			3
San Luis Blue-on-White	2		1		3
Chetucknee Blue-on-Blue		2			2
Maya Polychrome				1	1
Named grey/pink/white		1			1
Identified Blue-on-White	7	12	1	2	22
Named brown/white		2			2
Total	41	61	8	3	

fix the dates of occurrence of these majolica types in St. Augustine.

Table 7 shows the distribution of Majolica from closed 18th century contexts at the site.

The dates for the occurrence of these majolica types, given by Goggin, would place the site probably in the first quarter of the 18th century, somewhat earlier than the actual occupation. Forty-four percent of the majolica dates from the first half of the 18th century (according to Goggin's dates), including San Luis Polychrome, Puebla Blue-on-White, San Augustin Blue-on-White, and Aranama Polychrome. Puebla Polychrome, Abo Polychrome, Aucilla Polychrome, San Luis Blue-on-White, and Itchetucknee Blue-on-Blue; however, all date from the 17th century according to Goggin, and comprise 26 percent of the majolica from the site. Another 26 percent of the majolica is not dateable (unnamed types), and the remaining ten percent is plain white majolica, which probably are sherds from plain white portions of polychrome or blue-on-white vessels.

Of the four most frequently occurring majolica types, only one (Puebla Blue-on-White), falls primarily within the known de la Cruz site occupation. Since the associated artifact material, in conjunction with the documentary data, strongly indicates a second and third quarter of the 18th century occupation, it is believed that San Luis Polychrome (1660-1720: Goggin 1968:169), Puebla Polychrome (1650-1700; Ibid.:180) and San Augustine Blue-on-White (1700-1730; Ibid.:187) were in use at the de la Cruz site as late as 1763, and probably dates to this period throughout St. Augustine.

All of the majolica sherds which indicated vessel form were from plates; seven footring fragments and six plate marley fragments were found at the site. The footrings were all low and only slightly pronounced, suggesting a saucer-like plate, rather than a flat plate (see Figure 28). The single exception to this was a small, pronounced footring from a Puebla Blue-on-White cup or small bowl, measuring five centimeters in diameter.

Unidentified majolica sherds were generally those pieces of blue and white ware which were too small to identify, or to distinguish a pattern. One unusual green, pink, and white sherd; and two brown and white sherds are pictured in Figure 29.

The small amounts of majolica recovered from closed contexts in the lot, compared with Delftware and British refined Earthenware, emphasizes the availability of these British wares to the inhabitants of 18th century St. Augustine. British traders came more frequently to St. Augustine than did the Spanish situado ships, and they frequently brought large amounts of dry goods (see Harmon 1969).

Delftware

Delftware accounted for 29 percent of all the tableware from 18th century contexts. This tin-enamelled earthenware, produced by the same techniques as Spanish majolica, is an extremely common feature on 17th and 18th century European domestic sites. The most prevalent form of decoration on the delftware from the de la Cruz site was a blue and white floral or chinoiserie pattern, which accounted for 52 percent of the

delft at the site. Table 7 shows the frequency of delftware decorative elements on sherds from closed contexts at the site:

TABLE 7

Delftware Decoration

<u>Type</u>	<u>Number</u>	<u>Percent of Delftware</u>
Blue and White	115	60
Plain	62	32
Blue, Green and White	4	2
Manganese and White	4	2
Blue and White with Red Rim	2	1.5
Orange and Black	2	1.5
Powder Manganese	1	.5
White with Black, lead-glazed	1	.5
interior	<u>191</u>	<u>100.0</u>

The most frequently encountered form in delftware was also a plate form, evidenced by raised as well as flat footrings, and suggesting that both flat plates and saucer-like plates were used at the site. One delft mug base was found, as well as a portion of a large covered dish which was possibly used as casserole or serving dish. This was tin-enamelled with a thick, white enamel on the interior, and unglazed on the exterior (Figure 29), representing the only possibly European ceramic cooking or mixing vessel at the site. Although the presence of enamel on the interior of the vessel probably made it unsuitable for heavy boiling, or cooking methods which require frequent stirring (delft enamel is extremely easily chipped), it may imply the adoption of a basically European cooking method; baking in a casserole, which would have no parallel in the aboriginal food preparation repertoire, and therefore no parallel in aboriginal (San Marcos Stamped) equipment.

Slip-Decorated Earthenware

This brightly-patterned coarse earthenware functioned primarily as serving vessels at the de la Cruz site. All examples from closed 18th century contexts were of a red-bodied earthenware, decorated with a yellow pipeclay slip in a number of designs, including window-pane patterns, dots, combed and trailed patterns, and lattice patterns (Figure 31). Table 8 shows the distribution of slip-decorated earthenware from the site's closed proveniences:

TABLE 8

Slip-Decorated Earthenware

	<u>Number</u>	<u>% of Ceramics in Prov.</u>	<u>% of Total Slipware</u>
Kitchen	33	2.8	26
Courtyard	78	3.6	60
Outbuilding	8	1.5	8
Midden	<u>11</u>	<u>1.6</u>	<u>6</u>
Total	130		100

The most common form apparent in the slip-decorated earthenware was a large oval platter, usually with a pinched or serrated rim (Figure 31), probably used as large serving platters. Several flat, round bases were also recovered, which suggested round, footed bowls, or possibly very large posset cups or mugs. One nearly whole posset cup was recovered from a well, along with a number of fragments from other proveniences, indicating that this was a common form at the site. The only other slipware form recovered from closed contexts was that of a small, nearly whole cup, flat based with a deep, handleless, waisted body (Figure 31).

Four handles came from closed proveniences; these included three loop handles and one strap handle (Figure 31). The loop handles were small, and probably came from cups or mugs, while the strap handle was somewhat larger, and appeared to have been from a pitcher, or other vessel used for lifting or pouring.

In general, the slip-decorated earthenware from the site is in the form of large, possibly communal mugs and serving vessels, and occasional bowls. These large pieces of crockery may have been difficult to acquire, or prohibitively expensive in majolica, delft or refined earthenwares, and were acquired instead in slipware.

Refined Earthenwares

The term, "Refined Earthenwares," refers to those ceramic types developed in the 18th and 19th centuries of a thin, hard-fired, cream-colored earthenware, which was covered with a clear lead glaze. At SA-16-23, these included Creamware, Pearlware, Wheildon ware, Agate ware and Clouded ware (after Noel-Hume 1970). Hard-fired, lead-glazed redwares such as Astbury ware and Jackfield (Ibid.) will be considered in this category for purposes of analysis.

These types as a group account for 34 percent of the ceramics from closed contexts, with 73 percent of the refined earthenwares comprised of Creamware. Table 9 shows the distribution of these ceramics at the de la Cruz site:

TABLE 9Refined Earthenwares

	<u>Kitchen</u>		<u>Courtyard</u>		<u>Outbuilding</u>		<u>Midden</u>		<u>Total</u>
	*A	B	A	B	A	B	A	B	
Creamware	66	5.7	85	3.9	2	.37	5	.74	158
Wheildon ware	4	.3	2	.09	3	.55	3	..56	12
Agate ware	3	.25	22	1.0	1	.18			26
Jackfield	3	.25	2	.09			1	.14	6
Astbury	9	.77	2	.09					11
Total	85	7.3	113	5.2	6	1.1	9	1.3	213

*A--number of sherds

B--percent of all ceramics within provenience

The forms apparent in the refined earthenwares from the site are most commonly platters, large bowls or other serving and storage containers. Only one plate fragment was found, and this was of Creamware with a plain rim. Also in Creamware were two large, partial platters, one with a plain rim, and the other feather-edged; a large bowl with a raised footring; several handles (one with molded daises, suggesting a sugar bowl or other small container); a mug base, and a small, flat-based bowl (Figure 32).

Very few sherds exhibiting vessel form were recovered in the other varieties of refined earthenware, including only a green Wheildon ware lid handle shaped like a pineapple, and a partial, shallow Agate ware basin (Figure 33).

The most interesting aspect of the refined earthenwares at the de la Cruz site concerns the dating of the site, and the refined earthenwares found on it. It is known documentarily that virtually the entire population of St. Augustine, including all of the Indians, left the town

when it was turned over to the British in 1763, effectively removing the makers of San Marcos Stamped pottery from the area. While San Marcos pottery occurs in proveniences at the site which contain no refined earthenwares; no refined earthenwares occur in a provenience without San Marcos pottery. The dates for these refined earthenwares in the New World, as suggested by Noel-Hume on the basis of available data are:

Wheildon ware	1740-1770	(1970:123)
Agate ware	1740-1780	(1970:132)
Jackfield	1740-1780	(1970:123)
Astbury ware	1725-1750	(1970:123)
Creamware	1762-1820	(1970:125-126)

All of these ceramics fall within the known time span of San Marcos ceramics (pre-1763), except for creamware; however, of these ceramics, creamware is the most consistently associated with San Marcos ceramics. The initial explanation for this association was that either the provenience dated from after 1762 (and the first Spanish period), or that creamware was intrusive into earlier proveniences.

Upon closer examination of several closed proveniences, however, an alternative explanation must be considered for the consistent association of San Marcos pottery with creamware. This alternative is, of course, that creamware occurred in the New World as early as 1750. The beginning dates for the manufacture of creamware seem uncertain, since the first official use of the name, "Queen's Ware" was not until

1767 (Noel-Hume 1973:219) even though cream-colored refined earthenwares were being produced as early as the 1740's (Noel-Hume 1972:350). Little is known of the form of these early cream-colored earthenwares, which were produced apparently contemporaneously with the clouded and tortoise-shell Wheildon wares. They are not considered to be the products of Josiah Wedgwood, who began producing a high quality of creamware in 1762 or 1763 (Noel-Hume 1972:353). As early as 1751, a Boston newspaper contained an advertisement for "cream-colored earthenware," which was probably this early "creamware." (Noel-Hume 1973:229).

Four sealed proveniences occur in the kitchen area of SA-16-23 which stratigraphically precede or are associated with the wall itself. These are Features 13, 13 extension, 26 (a tabby floor) and FS 102, a zone sealed by the tabby floor. Since this building appears on the Jeffries map (dated 1762 but probably drawn from data captured in 1740), it dates from before 1762, and features precedent to the wall also date from before 1762.

In all of these features, creamware occurs in association with San Marcos pottery, majolica, delft, coarse earthenwares and the other refined earthenwares discussed above. Table 10 shows the entire ceramic contents of these proveniences:

TABLE 10

Closed Proveniences Dating Creamware

	<u>Fea. 13</u>	<u>Fea. 13 Ext.</u>	<u>Fea. 26</u>	<u>FS 102</u>
Creamware	1	12	1	1
San Marcos	63	22	78	121
Majolica		1	3	5

Delftware		1	6	4
Olive Jar	1	1		
Spanish Storage Jar				2
Slip ware	1		2	
El Morro ware	1			1
Astbury ware				1
Nottingham Stoneware			5	

Although the amount of creamware is small, it is in undeniable association with San Marcos and other, earlier, ceramic types.

Supporting data is offered by several other proveniences at the site, which, while not preceding architectural features, contain creamware sherds in a pit or matrix containing only first Spanish period ceramics. This was the case for nearly half of the closed, first Spanish period proveniences at the site.

Table 11 shows the distribution of ceramics in three trash pits, two in the courtyard and one in the kitchen, and all three occurred below the 18th century occupation zone, in a sterile sand matrix.

TABLE 11

Closed Proveniences Dating Creamware

	<u>Fea. 35</u>	<u>Fea. 36</u>	<u>Fea. 15</u>
San Marcos	107	100	97
Delftware	7	5	4
Majolica	4	5	3
Slipware	15	12	5
Olive Jar	3	2	3
Spanish Storage Jar	1	1	
Tondla (Aztec IV)			3
El Morro ware	1	1	
Chinese Porcelain	3	2	1
<u>Creamware</u>	19	17	8
Astbury ware	1		3
Wheildon ware	1		
Agate ware	19	3	

Nottingham Stoneware	2	2	1
White salt-glaze		7	6
Jackfield		2	

Again, creamware is consistently associated with a complex of ceramic dating firmly from the first Spanish period.

A third source of support for the association of creamware with first Spanish period contexts is provided by the midden behind the kitchen building. Excavated in arbitrary 15-centimeter levels, the midden shows a gradual disappearance of pearlware and ironstone china from top to bottom of the midden, and a decrease in amount, but nevertheless a persistence in, the presence of creamware:

TABLE 12

Level:	<u>Midden Ceramics</u>									
	<u>2</u>	<u>%</u>	<u>3</u>	<u>%</u>	<u>4&5</u>	<u>%</u>	<u>6</u>	<u>%</u>	<u>7</u>	<u>%</u>
San Marcos	87	26.8	127	56.9	233	91.4	152	98	46	93.9
Olive Jar	6	1.8	4	1.5	2	.8	1	.4	1	2.0
Slipware	34	10.3	8	3.5	5	1.8			1	2.0
Majolica	13	3.9	8	3.5	2	.8				
Stoneware	26	7.8	8	3.5			1	.4		
Spanish Storage Jar							1	.4		
Brown salt glaze							1	.4		
Preztec IV					1	.4				
Creamware	30	.9	13	5.7	2	.8			1	2.0
Pearlware	66	20.0	30	13.3	6	2.4				
Heildon ware	2	.6	2	.8						
Stbury ware	9	2.7	1	.4						
White salt glaze	1	.3	5	2.2						
Ironstone	28	8.4	7	3.1						
Porcelain	7	2.1	3	1.3						
Lead-glaze stone-ware	1	.3	3	1.3						
Nottingham Stoneware	3	.9								
Jackfield	4	1.2								
Morro ware	13	3.9	4	1.7	3	1.2				
Flat Plain			2	.8						
Total	330	100.0	225	100.0	255	100.0	155	100.0	49	100.0

The coquina and barrel well in the midden also contained creamware vessel portions associated with San Marcos vessel portions, Spanish musket pieces, delftware and majolica and provides another strong line of evidence that creamware occurs earlier than previously suspected (see Chapter III). While all of these data sources do not prove conclusively that creamware was being used in 1750, they do provide a legitimate suggestion that this may indeed be the case. The use of Stanley South's "archeological data bank" approach (South 1974) for artifact analysis makes this sort of observation about ceramic placement in time and space possible. A similar, pioneering study involving pearlware and using this approach has also been carried out with conclusive results (Ferguson 1974).

Stoneware

Very few examples of stoneware were recovered from closed contexts at SA-16-23, including only 15 sherds of white salt-glazed stoneware, and seven sherds of brown salt-glazed stoneware. Fifteen sherds of Nottingham stoneware were also recovered, but these were all small fragments and did not give any evidence of form or function. The same was true for the brown salt-glazed stoneware; however, the white salt-glazed sherds included a teacup fragment, a partial mug rim, and a small saucer rimsherd decorated in the diaper-wicker molded pattern (Noel-Hume 1970:116). These latter were probably slip-cast forms.

Chinese Porcelain

Chinese porcelain also accounted for a very small proportion

of ceramics from closed contexts. The 24 sherds, (.9 percent of ceramics from closed contexts) all bore an underglaze blue decoration, and were very small. Two sherds indicated that porcelain was used in tea equipage: one half of a shallow saucer, and a portion of a small lid, suggesting a sugar bowl (Figure 34).

The tea ritual during the 18th century has been suggested by Roth to have been a mark of leisure, indulged in as a social ritual (1966: 6). Tea, furthermore, was expensive and not easily obtained by the poor; and, perhaps most significantly, was characteristic of British colonists rather than Spanish colonists. The presence of tea equipage at SA-16-23 in closed, first Spanish period contexts, of salt-glazed stoneware, creamware, and Chinese porcelain, indicates that the household was operating at a level which permitted not only a degree of leisure in food consumption, but also the adoption of what may have been, at that time, an exotic food element.

Socio-Technic Items: Glass

Glass ware is included in the category of socio-technic items for the same reasons that tableware ceramics are included in that category. Although only the clear glass designated as tableware actually falls into this category, olive green winebottles and jars will also be discussed under this heading.

Very little ornamental glass was recovered from the site's closed contexts. Two molded plate rim fragments were decorated with a shell-edge design, and two glass stoppers were the only, non-drinking vessel or container glass found (Figure 35).

TABLE 13Distribution of Closed Provenience Glassware

	<u>Kitchen</u>	<u>Courtyard</u>	<u>Outbuilding</u>	<u>Midden</u>
I. <u>Storage Containers</u>				
A. Olive Green Bottles				
1. Whole	1			
2. Fragments-round				
a. rims	2	3		
b. neck	2	3		6
c. base	10	1	9	1
d. body	54	72	95	48
3. Fragments-square				
a. base	1	1	2	
b. body			3	
B. Jars-Olive Green				
1. Whole	1			
2. Fragments				
II. <u>Tableware</u>				
A. Drinking Goblets				
1. Fragments				
a. base		4		
b. stem		2		
c. rims	3	1	1	
d. body	9	13	16	3
B. Tumblers				
1. Fragments				
a. base			11	
b. body		1		
III. <u>Ornamental Glass</u>				
A. Plate Fragments			2	
B. Stopper			1	

The glass from SA-16-23 was classified according to a modified version of the classificatory system used by Brown (1971) at Fort Michilmackinack, and somewhat less complex due to the sparse nature of the sample. Table 13 shows the distribution of the glass from the site's closed contexts.

Tableware Glass

Wine goblets, tumblers, and the plate fragments mentioned above comprise the category of tableware glass. No intact examples were recovered, and reconstruction of any specimen was not possible.

The 50 fragments of stemmed goblets from closed contexts suggested that a vessel with a straight, drawn stem below a V-shaped bowl was the most common goblet form at the site. One faceted stem fragment was recovered, 2.6 centimeters in diameter, and one goblet rim fragment with an embossed design. This embossed sherd was recovered from the courtyard well, and is probably of Spanish origin (Figure 35)..

Goblet feet were typically circular and slightly convex, with an average diameter of 5.5 centimeters. One closed context example, however, was flat and considerably thicker (one centimeter) (Figure 36).

Also from the well was a fragment of a molded glass container, bearing a leaf-like design (Figure 35) and probably also of Spanish origin. This may have been from a small decanter, or a large perfume bottle.

Only two tumbler fragments were recovered from closed contexts; one base fragment from a fluted tumbler with a slight kick-up,

and one body fragment (Figure 36). The base is quite similar to that recovered by Hale Smith at Santa Rosa Pensacola (1965:102).

One vessel base of clear glass, also from a closed first Spanish period context, came from a decanter, or a large jar (Figure 36). This is of very thin, clear glass with a swirl patina pattern in the glass, and a low kick-up.

In general, the glass goblets are very similar to British glassware of the period, showing little distinct difference from those recovered at Williamsburg (Noel-Hume 1969) and at Fort Frederica (Deagan 1972). Certainly at least a portion of the glassware used in 18th century Spanish St. Augustine was of British origin, acquired illegally through British traders. Perishable ceramic, skin, and wood drinking vessels were probably also used, particularly by those households which could not afford to purchase British glassware, which, for that reason, probably functioned as a socio-technic item.

The majority of the glass from the site was from Olive Green bottles. Only one nearly intact example was found in a closed first Spanish period context, illustrated in Figure 37. Seventeen base fragments, and four whole bases were recovered, as well as 12 string rimmed necks. The measurement data for these bottle pieces is in Appendix III.

Square or case bottle fragments were less common in closed contexts; four base fragments and three body fragments were recovered, and the measurement data for this glass is also found in Appendix III.

Wine and rum were being imported to St. Augustine during the

18th century by both the British traders, and the Spanish situado (Harmon 1969:89-90; Contaduria 1751:922a), although no mention is made of the containers. The green glass bottles do not differ significantly from those recovered at British sites of the same period (Williamsburg, Frederica); however, so little is known of Spanish glass bottles of that period that the origins of the bottle from the de la Cruz site cannot be determined at this point.

One jar, recovered from a first Spanish period pit in the kitchen building, may be tentatively designated as Spanish glass, both by the associated material, and its lack of similarity to illustrated British glass. This is a fragile, square-sectioned jar with a narrow neck and a flaring rim (Figure 38), having large air bubbles uniformly throughout the glass, a feature not found typically in British glass. One other jar was found in a closed context at the site, and this was a small (three centimeters) square base of blue-green glass with bevelled corners (Figure 38).

Notably absent in the glass assemblage from the de la Cruz site (with the possible exception of the small, blue-green jar described above) closed contexts were perfume, oil, or medicine bottles. Only one stopper, pictured in Figure 35 was recovered, and no ceramic jars or phials which may have been used for drugs were recovered. This is in sharp contrast to most British colonial sites, where drug jar fragments are usually found (Noel-Hume 1970:204). There is no comparative data from Spanish domestic sites in Florida. A hypothetical explanation, however, for this absence at the de la Cruz site may be that there was an avoidance

of European apothecary drugs or medicines, and that local native remedies were used by the household instead.

Socio-Technic Items: Cosmetics

Very fugitive evidence for the use of cosmetics at SA-16-23 was recovered, and nearly all of it from the 1972 excavation. Most notable was a portion of a small San Marcos Stamped vessel containing a concentration of hematite rouge, found near the south house (MacMurray, personal communication, Gainesville 1973). Ground rouge was used by Southeastern United States Indians for ceremonial and possibly decorative purposes (Swanton 1946:531), although its function as a cosmetic, if any, is unknown. Certainly by the 18th century there had been enough Spanish women in St. Augustine to have made the cosmetic use of rouge known to Indian and mestizo women, and if adopted by these women, would have acted as a socio-technic device. The desirability of Indian women to appear more European in colonial times is illustrated by Oviedo's account of Indian girls in Mexico bleaching their skin to appear whiter (Morner 1971:26).

No other direct evidence for the use of cosmetics was recovered at the site. Indirect evidence included the bone haircomb, hairbrush base, and scissors discussed above.

Socio-Technic Items: Watchbird

Probably the most unusual evidence for socio-technic items was zooarcheological. This was the identification by Dr. Pierce Brodkorb (Florida State Museum, Gainesville, Florida) of a Mexican Thick Knee

(*Burhinus bistriatus*), a large bird native to central and south America, which is not found in the wild north of Mexico (Thomson 1964:816). These birds are from approximately 18 to 24 inches tall, and are "typically shy, but if caught young and kept as a domestic pet it becomes utterly fearless, to function as a 'noisy watchdog' at night" (Thomson 1964:816) (Figure 39).

The significance of this bird at the de la Cruz site lies in the fact that it was imported from New Spain, as a live bird, since no archeological or ornithological evidence has ever indicated the presence of the Mexican Thick Knee in North America at any time. This was definitely not a basic subsistence item, and it seems likely that it was especially brought to St. Augustine, probably at some expense, adding to the evidence that the mestizo de la Cruz household was fairly well-to-do, and could afford luxury items. It is also pertinent that a watchbird would not be necessary unless there was something to watch.

The presence or absence of the Thick Knee remains in future zooarcheological analyses of material from other St. Augustine sites will clarify the significance of this bird at the de la Cruz site. It is perhaps significant that Maria de la Cruz's husband, Joseph Gallardos, is listed as a native of New Spain (St. Augustine Cathedral Parish Records), since he may have had earlier exposure to the use of the Thick Knee, and arranged to have one for his home. Only more zooarcheological work can determine their frequency in colonial St. Augustine.

CHAPTER V

SEX, STATUS AND ROLE IN THE MESTIZAJE OF SPANISH COLONIAL FLORIDA

The preceding four chapters have discussed the ethnohistorical (Chapter I), ethnographic (Chapter II), and archeological (Chapters III and IV) aspects of 18th century acculturation and mestizaje in colonial Florida. The data from all of these approaches was found to be necessary for a full approximation of the Spanish colonial situation, and particularly for the generation of a model for mestizaje, discussed in this chapter.

The process of acculturation, of which mestizaje is only one facet, is highly complex and specific to each acculturative situation. For this reason it is extremely difficult to produce a model of acculturation, or a system of models, which can be applied as an explanatory tool to all instances of acculturation. A large body of research dealing with european-aboriginal culture contact acculturation is available, however, including notable syntheses by Spicer (1958, 1960, 1961); Foster (1960); the Social Sciences Research Council (1954) and Service (1955). While these syntheses are helpful in the analysis of the acculturative situation in 18th century Florida, no single proposed model accounts for the processes operating at that time and place.

George Foster's analysis of Spanish-Indian acculturation in Mexico, which incorporated the concepts of the culture of conquest, donor and recipient culture screening, and cultural crystallization, is especially useful in the analysis of the processes operating in 18th century Florida; and has been discussed in Chapter II. Foster's model was drawn upon extensively in the generation of the hypotheses outlined in this study, and tested at the de la Cruz site.

Based on the archeological test, this hypothesis and its test implications were confirmed; that is, the pattern of data recovered archeologically did not diverge or differ significantly from that pattern which was hypothesized. Although there has been no agreement or stated criteria among archeologists for adequate hypothesis confirmation (Watson et al. 1971:46), the conformity of the archeological data to the proposed test implications leads to the statement of the hypothesis below as confirmed:

"Acculturation in 18th century St. Augustine was effected largely by Indian women in Spanish or mestizo household units, within a predominantly male-oriented (military) cultural milieu."

Using this as a confirmed hypothesis, the nature of acculturation and mestizaje in Spanish colonial St. Augustine may be analyzed within existing models. This not only places the pattern in a broader perspective, but also reveals it as a unique contact situation.

Spicer's discussion of types of contact and processes of change

is highly useful in ordering and analyzing the data comprising the content of this study. Spicer's model proposes types of contact communities, including Spanish Mission, Fur Trade, United States Reservation, Canadian Reservation, and Urban Segment (p. 526); which may be characterized as not only describing broad community types, but also by (1) the nature of the structural link between the communities involved, (2) the role patterns and accompanying sanctions of the dominant culture, and (3) the level of stability of the subordinate culture's social structure.

The analysis of different contact situations with respect to these criteria resulted in the definition of four acculturation processes:

1. Incorporation, which involves the transfer of elements from one cultural system and their integration into another situation in such a way they are altered to conform to meaningful elements and relationships of the recipient cultural system (Spicer 1961:530).
2. Assimilation, in which the recipient culture accepts and assimilates the dominant culture's items in terms of the meanings and relationships of the dominant cultural system.
3. Fusion, which involves the combination of elements from two or more cultural systems into a single system, distinct from the parent cultures.
4. Compartmentalization, which refers to the acceptance of one culture's elements by another culture which keeps those elements separate and without linkage to other recipient cultural complexes.

One or more of these processes may be operating in any

acculturative situation, although a single process is usually dominant. All of these processes except incorporation usually occur in situations of directed change; that is, a contact situation in which one culture regularly brings definite sanctions to bear on another culture that are designed to bring about changes in the cultural behavior of the subject culture (Spicer 1961:521). Non-directed change does not include these features.

The culture contact situation in 18th century St. Augustine can be analyzed according to this system, although it is evident that certain additions to, and alterations in the model will be necessary.

There are two aspects of Spicer's, and most other models of acculturation which must be recognized and modified before 18th century St. Augustine can be fully understood. The first of these is the assumption inherent in nearly all theories that there is a dominant or superordinate culture, and a subordinate culture involved in any contact situation. This implies an attempt on the part of the dominant culture (usually European culture in European-aboriginal contact) to control, exploit or take over certain areas of the subordinate culture. While this was the case in the earlier mission phase of Spanish participation in Florida, it was not in the 18th century town. Here the purpose of the European cultural element was not directly involved with the native cultural element, and aboriginal participation in town life was, for the most part, voluntary. For these reasons the European culture should be treated as the "milieu" culture rather than the dominant culture. Foster's model (1960) avoids the implications of dominant and subordinate by the use of the terms "donor"

and "recipient." In colonial St. Augustine, however, the Indian and the Spanish cultures each can be considered as both donor and recipient cultures. This brings up the second aspect of most acculturation theory which is inappropriate for the subject of this study. As stated by Spicer, the processes of acculturation "have to do with the alteration of a culture under conditions of contact" (1961:534), which was not the case in 18th century St. Augustine where this was a highly reciprocal process, not so much altering either of the cultures involved, as providing an adaptive system in which both cultures could participate.

Type of Contact

St. Augustine in the 18th century cannot be classified with any of the five contact communities outlined by Spicer; although as a non-directed change situation, it comes closest to the urban segment community form. More precisely, 18th century St. Augustine, along with many 17th and 18th century towns in New Spain, the Caribbean, and the United States Southwest, can be characterized as a frontier-garrison community, in which change is neither directed or demanded by the milieu or intrusive culture.

Within the frontier-garrison community there are no necessary or formalized links between the cultures involved, and those that occur are therefore voluntary. In Spanish colonial St. Augustine, one of the most important of these links was the fact that Indian women lived with or married Spanish men. It should be emphasized here that the Frontier-Garrison model refers only to the town life situation; peripheral mission

settlements should be included within an entirely different model.

The role patterns and accompanying sanctions of the dominant (i.e. intrusive or milieu) culture's members were domestic, sexual, and probably in most cases, non-coercive. Those sanctions which in the 18th century would be normally applied from man to woman, or from husband to wife, would be the ones in effect in Spanish colonial St. Augustine. Little is known of prostitution in the colony, although in a garrison town as isolated as St. Augustine, it probably did occur. This probably also accounted for some Spanish-Indian contact, and another accompanying set of roles and sanctions. The liaisons between Indian women and Spanish men resulting from encounters of this kind would most likely be temporary and limited, and would probably not be a significant factor in cultural exchange.

The social stability of the subordinate culture under contact is of indirect relevance in the frontier-garrison situation. The circumstances of town life and miscegenation in St. Augustine were probably made possible by the instability and fluctuation in the aboriginal cultures of the area during the preceding centuries (see Chapter I), making individuals more susceptible to change, and involvement in the Spanish culture. Within the town itself, however, the subordinate culture is represented by isolated individuals, carrying only the aboriginal cultural repertoire available to their role, sex, and status.

To summarize in Spicer's terms, the culture contact situation in 18th century St. Augustine was one of non-directed change, in a frontier-

garrison town. The structural links between the cultures involved were Indian women, and the Spanish men with whom they lived. The milieu (Spanish) culture's roles were domestic, sexual, and non-coercive, applied to individuals who were role-playing during the process of contact, in isolation from their native social structure, which was undergoing rapid change and fluctuation. Under these circumstances, none of the processes of change outlined by Spicer is fully achieved, although certain elements of incorporation and fusion are present. Socio-technic items are incorporated, while the entire pattern of the mestizo household cultural expression as revealed in the material culture, was a unique system fused from elements of the Spanish and aboriginal cultural systems. The meaning and relationships of these elements, however, still contained strong links with the referents and relationships to the elements in the parent cultures from which they came, and for this reason did not constitute fusion as it was used by Spicer. It is therefore suggested that the process of change and acculturation in the Spanish and Indian cultures of 18th century St. Augustine be characterized as mestizaje. Mestizaje can be expected to occur under the following circumstances:

- | | |
|---|--|
| 1. Type of change: | non-directed |
| 2. Contact community: | frontier-garrison town |
| 3. Structural link: | male-female domestic relationship |
| 4. Role of dominant culture members: | domestic, sexual, non-coercive |
| 5. Nature and stability of recipient culture members: | isolated individuals; non-stable native social structure |

6. High degree of reciprocity and cultural exchange

The reciprocal nature of the mestizaje situation, and the individual rather than institutional nature of the cultural exchange are also important factors in mestizaje.

Material Correlates of Mestizaje

One of the aims of the "New Archeology," as espoused by Binford (1962, 1968); Watson et al. (1971); Longacre (1963); Flannery (1967) and others, is the determination and explanation of cultural processes. This typically entails the description of a cultural system, and an explanation of the relationships and processes operating between the parts of the system. Ultimately, in prehistoric archeology, this requires the determination of behavioral correlates for the patterning of material culture, and the establishment of agreed-upon generalizations for these patterns and their correlates. In addition to the use of the deductive approach in archeological explanation, the use of sophisticated laboratory analysis procedures and the application of statistical tests to archeological data; ethnographic analogy, "action archeology" (Kleindeist and Watson 1956) and experimentation for replication have been employed to determine behavioral correlates from material culture. These problems and problem-solving approaches are also used in historic archeology, which has been somewhat neglected, and which has application to archeological theory and the interpretation of material remains in terms of human behavior.

This additional aspect is the "known" element in historic archeology; that is, the documentarily determined aspects of social structure,

group identification, socio-economic status, household composition and other non-tangible aspects of culture. For example, it was known documentarily that the de la Cruz site was occupied during a certain closely determined timespan, by an Indian woman, her soldier husband, and their mestizo children. It was known also that they lived within a criollo, militarily-oriented cultural milieu, characterized in 18th century documents by its poverty, isolation, and gracelessness. With this knowledge in hand, the excavation at the de la Cruz site attempted to establish material correlates for the processes of mestizaje and acculturation represented at the site. In this way, patterns of material culture can be suggested as representing certain known patterns of cultural behavior. These material patterns can then be tested further, and ultimately used as interpretive tools at sites without documentation.

Although the problems to which the de la Cruz site excavation was oriented are applicable primarily to historic sites, there are a number of aspects applicable to prehistoric sites which could be developed from the excavation of documentarily known Indian or European sites. These might include contrasts between material correlates for extended and nuclear families; patterns of cultural disorientation due to invasion or warfare; revitalization; difference in the material patterns associated with different status individuals in tribal or chiefdom societies; or change in subsistence patterns due to the introduction of a new food source, to name only a few.

This study offers a pattern of material culture for mestizaje;

this pattern must be treated as a complex and considered in its entirety, rather than by the presence or absence of individual traits. The selection of items in this complex was determined by:

1. The conformance of excavated material remains to the projected material patterns of the hypothesis.

2. The comparison of material remains from this site with the patterns of remains from other sites of similar timespan, habitat, and known socio-economic position.

In 18th century St. Augustine, the suggested complex for mestizaje includes:

1. A food preparation sub-complex including aboriginal utilitarian ware associated with European ceramic tableware; and including open-fire cooking pits. A mixture of native and aboriginal and introduced Mesoamerican food preparation techniques and items are also noted in St. Augustine.

2. Food resources conforming to the aboriginal exploitation patterns of the area, with the additional use of introduced items. This feature was certainly due to a great extent to the inhospitable nature of the environment, and the failure of farming. Where mestizaje occurs in an environment more favorable to European economic endeavor, the subsistence pattern suggested above may not occur. In colonial St. Augustine, the presence of native Florida corn as opposed to Mexican corn is also suggested as a corrolary to mestizaje.

3. The presence of separate male and female activity areas;

the male areas including predominantly European artifacts, and the female areas including mixed aboriginal-European artifacts, or primarily aboriginal. This extends to items of male and female activity themselves; male items are predominantly European, while female activity items are mixed aboriginal-European.

4. Medicinal remedies of native origin; this is represented by the absence of European drug jars or medicine phials.

5. The presence of European decorative elements, particularly clothing and ornaments, to the exclusion of aboriginal items. It is more specifically stated that a high proportion of decorative glass beads will be present at sites of mestizaje, along with a relative absence of other kinds of European jewelry.

It should be cautioned again that individual items cannot be considered to indicate the mestizaje process, but that they must be treated as a complex of items and patterns.

The material correlates for mestizaje outlined above are discussed more fully in Chapter IV, and it will be noted that some modification in the pattern suggested by the original hypothesis has taken place. This was due to the archeological record, which functioned, of course, as the test for the hypothesis. Some hypothesized elements did not occur, such as evidence for women's crafts, or for religious activity; while other elements were felt not to be representative of anything but a general Spanish colonial pattern, such as sherd discs.

Hypotheses Generated

In the course of ethnohistorical and archeological research, several problems concerning mestizaje and acculturation in 18th century St. Augustine were encountered, for which additional testing will be necessary. The first of these involves the proportion of European cultural elements to aboriginal elements in the mestizaje process. It is hypothesized that early stages of mestizaje will have a very high proportion of aboriginal elements in areas of female culture, much like the de la Cruz site. It is also hypothesized, however, that the aboriginal elements will be replaced at a rapid rate by criollo or European elements as mestizo population becomes established. This hypothesis needs a series of archeological tests both at known mestizo sites, and at comparative criollo sites.

Another archeologically testable hypothesis involves the nature and origin of the influence of the aboriginal and mestizo groups in colonial Florida. It is believed, based on the data from the de la Cruz site, that most of the introduced influence which was presented to and accepted by Spanish-Indian and mestizo households was from the criollo culture of New Spain, rather than from Spain by the Spanish peninsulares. This was reflected at the de la Cruz site by the introduced Mesoamerican food preparation equipment, and by the Mexican watchbird. A preliminary survey of documentary data indicated that mestizo and Indian women who married non-Indians, most often married men from other parts of New Spain (St. Augustine Historical Society). This also needs to be tested

by a thorough documentary survey.

Another related problem is that of the social status of the mestizos in St. Augustine. One way that this can be archeologically investigated is through the settlement patterns of mestizo households. It is cartographically suggested that Block 16 of 18th century Spanish St. Augustine may have included a concentration of mestizo households, since Maria de la Cruz, and her next door neighbor, Clemente Ylario, both had mestizo households. (St. Augustine Historical Society; Puente 1788). The hypothesis that mestizo social status is reflected by their segregation into marginal areas of the town can be tested both archeologically and cartographically.

The dietary patterns of mestizo households also requires further zooarcheological testing. It is hypothesized on the basis of the de la Cruz site data that mestizo and acculturated Indian households had a more vigorous economic adaptation than European households, due to their more intimate knowledge of, and possibly easier access to, local resources. The testing of this hypothesis will require the comparative analysis of food remains from known European and mestizo sites.

It is also conceivable that this vigorous economic adaptation extended to their areas than simply diet. Despite their social status within the town, it certainly cannot be generalized that mestizos in 18th century St. Augustine were poor and low on the socio-economic scale. The material assemblage from the de la Cruz site indicates that the inhabitants were not poor, and if anything, were comfortably situated. This is implied

by the presence of the houses themselves, which were multiple-storied, substantial, and surrounded by a wall. The presence of socio-technic items such as glass and ceramic tablewares, tea equipage and ornaments, and particularly the imported watchbird also implied material well-being.

Since almost no archeological data is available from domestic sites in colonial St. Augustine, a great deal of comparative analysis from sites of known racial and socio-economic occupation is still necessary. The major interpretive problem encountered during the excavation, analysis, and interpretation of the de la Cruz site material was this lack of comparative material. The possibility that the material complex represented at the de la Cruz site was typical for all of colonial St. Augustine, rather than of any particular population segment of that time and place cannot be ignored. Possibly by the mid-18th century, a very large proportion of the town population was mestizo (see Deagan 1974), or that, due to environmental exigencies, the mestizo cultural expression was indistinguishable from the criollo culture. Although the basic tenet of this study is that this is not the case, the possibility cannot be rejected until further archeological, ethnohistorical, cartographic, and zooarcheological research has been carried out in colonial St. Augustine.

BIBLIOGRAPHY

Abbreviations:

S.C.U.F. Stetson Collection, University of Florida
A.G.I. Archivo General de las Indias, Sevilla

Andrews, Evangaline and Charles Andrews (eds.)

1945 God's Protecting Providence
Yale Historical Publications #19

Arana, Luis

1971 Military Manpower in Florida
El Escribano Vol. 8:55-57

Arnade, Charles W.

1959 Florida on Trial
Miami, University of Miami Press

Arnade, Charles

1961 The Architecture of Spanish St. Augustine
The Americas XVIII (2):149-185

Arnade, Charles

1965 Cattle Raising in Spanish Florida 1513-1763
St. Augustine Historical Society Publication #21

Ascher, Robert

1961 Analogy in Archeological Interpretation
Southwestern Journal of Anthropology
17:317-325

Atkinson, David and Adrian Oswald

1969 London Clay Tobacco Pipes
Journal of the Archeological Association of London,
3rd Series Vol. XXXII

Beck, H. C.

1928 Classification and Nomenclature of Beads and Pendants
Archeologia
Oxford, Society of Antiquaries of London

Benavides, Antonio de

- 1738 Manuscript, A.G.I., 58-2-16-45.
 (Governor Antonio de Benavides to the Spanish Crown.
 April 24, 1738)
 Photostat in S.C.U.F.

Bennett, Charles E.

- 1968 Settlement of Florida
Florida Facsimile Series
 Gainesville, University of Florida Press

Binford, Lewis R.

- 1962 A New Method of Calculating Dates from Kaolin Pipe
 Stem Fragments
Southeastern Archeological Conference Newsletter
 9 (1):19-21

Binford, Lewis

- 1962 Archeology as Anthropology
American Antiquity 28:217-255

Binford, Lewis

- 1968 Archeological Perspectives
 in Binford and Binford (eds.),
New Perspectives in Archeology:5-32
 Chicago, Aldine

Boyd, Mark, Hale Smith and John Griffin

- 1951 Here They Once Stood
 Gainesville, University of Florida Press

Brinkerhoff, Sydney B. and Pierce A. Chamberlain

- 1972 Spanish Military Weapons in Colonial America 1700-1821
 Harrisburg, Pa. Stackpole Books

Brooks, A. M.

- 1909 The Unwritten History of Old St. Augustine
Manuscript on File
 University of Florida Libraries

Brown, Margaret Kimball

- 1971 Glass from Fort Michilmackinac:
 A Classification for 18th Century Glass
The Michigan Archeologist 17(3-4)

Buenaventura, Francisco de

- 1735 Manuscript, A.G.I., 86-7-21/9, 10
(Francisco de Buenaventura, Bishop of Tricale
to the Spanish Crown. Oct. 10, 1735)
Photostat in S.C.U.F.

Buenaventura, Francisco de

- 1736 Manuscript, A.G.I., 58-1-35
(Francisco de Buenaventura, Bishop of Tricale
to Governor Juan de Horcasitas. Dec. 22, 1736)
Photostat in S.C.U.F.

Bullen, Ripley P.

- 1958 Six Sites near the Chattahoochee River in the Jim
Woodruff Reservoir Area, Florida
Bureau of American Ethnology Bulletin 169
(River Basin Survey Papers #14):315-357

Canzo, Menendez de

- 1600 Manuscript, A.G.I., 54-5-9
(Governor Menendez de Canzo to the Spanish Crown.
Jan. 12, 1600)
Microfilm, Lowery Collection, University of Florida

Canzo, Menendez de

- 1598 Manuscript, A.G.I., 54-5-9
(Governor Menendez de Canzo to the Spanish Crown.
Feb. 24, 1598)
Microfilm, Lowery Collection, Reel 4.
University of Florida

Canzo, Menendez de

- 1601 Manuscript, A.G.I., 54-5-9
(Governor Menendez de Canzo to the Crown of Spain.
April 24, 1601)
Microfilm, Lowery Collection, University of Florida

Cerda, J.

- 1701 Manuscript, A.G.I., 58-1-27/28
(J. Cerda to Crown of Spain, Nov. 15, 1701)
Photostat in S.C.U.F.

Chance, Marsha

- ms. A Study of the South Foundation SA-16-23
St. Augustine, Florida
on file University of Florida Anthropology Laboratory

Chaplin, Raymond E.

- 1971 The Study of Animal Bones from Archeological Sites
New York, Seminar Press

Chatelaine, Verne

- 1941 The Defenses of Spanish Florida 1565-1763
Carnegie Institute of Washington Publication #511

Contaduria

- 1616 Manuscript, Historic St. Augustine Preservation Board
Calendar Cards Contaduria of 1616
(Situado items to St. Augustine, 1616)

Contaduria

- 1718 Manuscript, A.G.I., Contaduria 961, Document 5
(Report of Items sent to the Florida Colony, 1718)
Translation by Historic St. Augustine Preservation Board,
St. Augustine

Contaduria

- 1721 Manuscript, A.G.I., Contaduria 961, Document 1
(Report of requests for supplies, St. Augustine)
Translation by Historic St. Augustine Preservation Board,
St. Augustine

Contaduria

- 1751 Manuscript, A.G.I., Contaduria 922a, Document 7
(Report of items in St. Augustine storehouse)
Translation by Historic St. Augustine Preservation Board,
St. Augustine

Corcoles y Martinez, Francisco de

- 1704 Manuscript, (Governor Francisco Corcoles y Martinez to
the Spanish Crown. Sept. 12, 1704) in Brooks 1909:167-168

Covington, J. W. and A. F. Falcones

- 1963 Pirates, Indians and Spaniards: Father Escobedo's
"La Florida"
St. Petersburg, Great Outdoors Publishing Co.

Davis, Frederick

- ms. History of the Orange in the Floridian Peninsula (1936)
P. K. Yonge Library of Florida History, Gainesville

Deagan, Kathleen A.

- 1972 Fig Springs: The Mid Seventeenth Century in Florida
Historical Archeology, 1972:23-46

Deagan, Kathleen

- 1972 Pipestems: Drug Jars: The Colonial Middle Class
in 18th Century Georgia
National Park Service Report
on File: Tallahassee, Southeastern Center

Deagan, Kathleen A.

- 1974 Mestizaje in Colonial St. Augustine
Ethnohistory Vol. 18

Deagan, Kathleen A.

- n.d. Assimilation and Fusion in a Changing Culture:
The Eastern Timucua
in Proctor and Milanich (eds.)
Historic Indians of the Southeast
Gainesville, University of Florida Press

DeJarnette, David and Asael T. Hansen

- 1960 The Archeology of the Childersburg Site, Alabama
Florida State University Notes in Anthropology #4

Doctrineros

- 1728 Manuscript, A.G.I., 58-2-16/22
(Census of Doctrineros, St. Augustine, Florida.
Sept. 1, 1728).
Photostat in S.C.U.F.

Dobyns, Henry

- 1963 An Outline of Andean Epidemic History to 1720
Bulletin of the History of Medicine
37 (6):493-515

Dunkle, John R.

- 1958 Population Change as an Element in the Historical
Geography of St. Augustine
Florida Historical Quarterly 37 (1):3-32

Fairbanks, Charles H.

- 1957 Ethnohistorical Report of the Florida Indians
Unpublished Manuscript: Before the Indians Claims
Commission Docket 73, 151

Fairbanks, Charles H.

- 1972 Backyard Archeology in St. Augustine, Florida
Paper presented at 5 th Annual Meeting of
Society for Historical Archeology
Tallahassee, Florida

Fairbanks, George

- 1881 History and Antiquities of St. Augustine, Florida
Jacksonville, Fla. H. Drew Co.

Ferguson, Leland

- 1973 Analysis of Ceramic Materials from Fort Watson, S.C.
Dec. 1780–April 1781
Paper presented at 14th Annual Conference on Historic Sites
Archeology Memphis, Tenn.

Flannery, Kent V.

- 1967 Culture History vs. Culture Process:
A Debate in American Archeology
Scientific American 217 (2):119–122

Foster, George

- 1960 Culture and Conquest
Viking Fund Publications in
Anthropology #27

Franciscans of Florida

- 1722 Manuscript, A.G.I., 58–1–30/95
(Franciscan Provincial to the Crown of Spain,
Dec. 28, 1722)
Photostat in S.C.U.F.

Freyre, Gilberto

- 1964 The Masters and the Slaves
(Abridges from the 2nd English Edition)
New York, Knopf

Gannon, Michael V.

- 1965 The Cross in the Sand
Gainesville, University of Florida Press

Gatschet, Albert S.

- 1878 The Timucua Language
Proceedings of the American Philosophical Society
Vol. 17:490–504

Geiger, Maynard

- 1939 The Franciscan Conquest of Florida
Studies in Hispanic-American History Vol. I
Washington

Geiger, Maynard

- 1940 Biographical Dictionary of the Franciscans in
Spanish Florida and Cuba (1528-1841)
Franciscan Studies, 21
Paterson, N. J.

Goggin, John M.

- 1951 Fort Pupo--A Spanish Frontier Outpost
Florida Historical Quarterly
30 (2):139-192

Goggin, John M.

- 1952 Space and Time Perspective in Northern St. Johns
Archeology
Yale University Publications in Anthropology #47

Goggin, John M.

- 1953 An Introductory Outline of Timucua Archeology
Newsletter: Southeastern Archeological Conference
3:3

Goggin, John M.

- 1960 The Spanish Olive Jar: An Introductory Study
Yale University Publications in Anthropology #62

Goggin, John M.

- 1968 Majolica in the New World
Yale University Publications in Anthropology #72

Gregory, Hiram A. and Clarence Webb

- 1965 European Trade Beads from Six Sites in
Natchitoches Parish, Louisiana
Florida Anthropologist 28 (3) (part 2):15-44

Guerra, Francisco de la

- 1673 Manuscript, A.G.I., 54-5-20/48
(Frey Francisco de la Guerra to the Spanish Crown.
Oct. 20, 1673)
Photostat in S.C.U.F.

Hacklyut, Richard

- 1903 The Principle Navigations, Voyages, Traffiques
and Discoveries of the English Nation Vol. 8-9 (1600)
Glasgow, James Maclehose

Harman, Joyce

- 1969 Trade and Privateering in Spanish Florida 1732-1763
St. Augustine Historical Society Publication

Harper, Frances (ed.)

- 1942 John Bartram's Diary of a Journey Through the Carolinas, Georgia and Florida from July 1, 1765 to April 10, 1766
Philadelphia

Harrington, J. C.

- 1954 Dating Stem Fragments of Seventeenth and Eighteenth Century Clay Tobacco Pipes
Quarterly Bulletin of the Archeological Society of Virginia
9 (1)

Heighton, Robert and Kathleen Deagan

- 1972 A New Formula for Dating Kaolin Clay Pipestems
Conference on Historic Sites
Archeology Papers Vol. 6

Hemmings, E. Thomas and Kathleen Deagan

- 1973 Excavations on Amelia Island in Northeast Florida
Florida State Museum Contributions to
Anthropology and History #18

Jeffries, Thomas

- 1762 A Description of the Spanish Islands and Settlements on the Coast of the West Indies...and Illustrated Chiefly from Original Drawings Taken from the Spaniards in the Last War
London

Historic St. Augustine Preservation Board

- n.d. Preliminary Cartographic Survey of Block 16,
St. Augustine
St. Augustine, Florida

Kidd, Kenneth and M. A. Kidd

- 1970 A Classification System for Glass Beads for the Use of Field Archeologists
Canadian Historic Sites Occasional Papers in Archeology and History #1

Kleindeist, Maxine R. and Patty Jo Watson

- 1956 "Action Archeology": The Archeological Inventory of a Living Community
Anthropology Tomorrow 5:75-78

Longacre, William A.

- 1963 Archeology as Anthropology: A Case Study
Science 144:1454-1455

MacMurray, Carl D.

- n.d. Backyard Archeology in St. Augustine
M.A. Thesis in Progress. University of Florida
Gainesville

MacMurray, Judith A.

- 1973 The Definition of the Ceramic Complex at San Juan del Puerto
Master of Arts Thesis, University of Florida
Gainesville

MacNeish, Richard, Antoinette Nelken-Terner and Irmgard W. Johnson

- 1967 Nonceramic Artifacts
The Prehistory of the Tehuacan Valley Vol. 2
Austin, University of Texas Press

Manucy, Albert

- 1962 The Houses of St. Augustine
The St. Augustine Historical Society Publication

Manuel, Chief of Asile

- 1656 Manuscript, A.G.I., Escribania de Camara, legajo 155,
Folios 380-383 (Manuel, Chief of Asile to Governor of
Florida, accompanied by a Spanish Translation certified
by Fr. Alonso Escudero. Dec. 9, 1656).
Photostat in National Anthropological Archives,
Smithsonian Institution
ms. #2446f

Mark, Robert F.

- 1968 Clay Smoking Pipes Recovered from the Sunken City
of Port Royal, May 1, 1966-Sept. 30, 1967
Unpublished report
Jamaica National Trust Commission
Kingston

Menendez, Pedro de Aviles

- 1566 Manuscript, A.G.I., 54-1-51/167
(Governor Pedro Menendez de Aviles to the Spanish Crown.
Oct. 20, 1566).
Photostat in S.C.U.F.

Milanich, Jerald

- n.d. The Western Timucua
in Proctor and Milanich (eds.)
Historic Indians of the Southeast
Gainesville, University of Florida Press
(Forthcoming)

Milanich, Jerald T. and William C. Sturtevant

- 1972 Francisco Pareja's 1613 Confessionario
Tallahassee, Division of Archives,
History and Records Management

Moore, C. B.

- 1894 Certain Sand Mounds of the St. Johns River, Florida
Journal of the Academy of Natural Sciences of Philadelphia
Vol. 10:5-105; 129-246

Morner, Magnus

- 1970 Race Mixture in the History of Latin America
Boston, Little, Brown and Co.

Moya, Emile de Boyrie, Marguerita Kristensen and John Goggin

- 1957 Zamia Starch in Santo Domingo
Florida Anthropologist 10 (3-4):17-40

Neuman, Robert K.

- 1961 Domesticated Corn from a Fort Walton Site in
Houston County, Alabama
Florida Anthropologist XIV (3-4):75-80

Noel-Hume

- 1969 Glass in Colonial Williamsburg's Archeological Collections
Williamsburg, Va.

Noel-Hume, Ivor

- 1970 A Guide to Artifacts of Colonial America
New York, Knopf

Noel-Hume, Ivor

- 1972 The Who, What, When and Where of English Creamware
Plate Design
Antiques February:350-355

Noel-Hume, Ivor

- 1973 Creamware to Pearlware: A Williamsburg Perspective
in Quimby (ed.) Ceramics in America pp. 217-254
Charlottesville, University of Virginia Press

Olsen, Stanley

- 1963 Dating Early Plain Buttons by Their Form
American Antiquity 28 (4):551-553

Omwake, H. G.

- 1965 White Kaolin Pipe Bowls and Stem Fragments
in Smith, Archeological Excavations at Santa Rosa
Pensacola pp. 42-52
Florida State University Notes in Anthropology Vol. 10

Otto, John Solomon and Russell Lewis

- n.d. A Formal and Functional Analysis of San Marcos Pottery
Bureau of Historic Sites and Properties,
Florida Department of State Bulletin
(Forthcoming)
Tallahassee, Florida

Phillip II (of Spain)

- 1593 Manuscript, A.G.I., 86-5-19
(Royal Cedula to the Governor of Florida.
Oct. 2, 1593)
Photostat in S.C.U.F.

Phillip II (of Spain)

- 1660 Manuscript, A.G.I., 54-5-10/87
(Royal Cedula to Governor of Florida.
Feb. 26, 1660)
Photostat in S.C.U.F.

Phillip V (of Spain)

- 1714 Manuscript, A.G.I., 58-1-23/494
(Royal Cedula of Spain to Governor Francisco
de Corcoles y Martinez. Sept. 26, 1714)
Photostat in S.C.U.F.

Ponce de Leon, Nicholas

- 1664 Manuscript, A.G.I., 54-5-10/95
(Letter of Nicholas Ponce de Leon to the Spanish Crown.
Feb. 9, 1664)
Photostat in S.C.U.F.

Puente, Jose Eligio

- 1763 Plano de la Real Fuerza, Baluarte, y Linea de la Plaza
de San Agustin de Florida
in Buckingham Smith Collection
Reel 2 (microfilm)
University of Florida

Purdy, Barbara A. and F. N. Blanchard

- ms. Petrographic Analysis of the Structure of Florida Chert
Florida Anthropologist
(Forthcoming)

Ramirez, Juan

- 1622 Manuscript, A.G.I., 54-5-17/88
(Juan Ramirez to the Crown of Spain.
April 24, 1622)
Photostat in S.C.U.F.

Randall, Mark E.

- 1971 Early Marbles
Historical Archeology Vol. 5:102-105

Ribault, Jean

- 1964 The Whole and True Discoverye of Terra Florida (1563)
Gainesville, University of Florida Press

Roque, Mariano de la

- 1788 (Reports on the Condition of Crown Property.
Dec. 31, 1788)
Manuscript, East Florida Papers 2023 with Map:
Plano de la Ciudad de Sn. Agustin de la Florida, 1884
(2068)
Gainesville, Florida

Roth, Rodris

- 1966 Tea Drinking in 18th Century America:
Its Etiquette and Equipage
Contributions from the Museum of History
and Technology #14

St. Augustine Historical Society

- n.d. Parish Records of the Cathedral of St. Augustine
1574-1763
St. Augustine, Florida

Salazar, Pable de Hita

- 1675 Manuscript, A.G.I., 58-1-26/38
(Gov. Pable de Hita Salazar to the Spanish Crown.
August 24, 1675)
Photostat in S.C.U.F.

Seaberg, Lillian

- 1955 Spaniard and Indian in Central Florida
Unpublished M.A. Thesis
University of Florida

Seaberg, Lillian.

- ms. Preliminary Excavations at the Fountain of Youth Site
on File, University of Florida Anthropology Laboratory

Sears, William

- 1954 The Socio-Political Organization of the Pre-Columbian
Cultures on the Gulf Coast Plain
American Anthropologist 56 (3):339-345

Serrano y Sanz, Manuel (ed.)

- 1913 Documentos de la Florida y la Luisiana,
Siglos XVI al XVIII
Madrid Libreria General de Victoriano Suarez

Service, Elman

- 1955 Indian-European Relations in Colonial Latin America
American Anthropologist 57:411

Smith, Hale G.

- 1948 Two Historical Archeological Periods in Florida
American Antiquity XIII (4)

Smith, Hale G.

- 1956 The European and the Indian
Florida Anthropological Society Publication #4

Smith, Hale G.

- 1962 El Morro
Florida State University Notes in Anthropology Vol. 6

Smith, Hale G.

- 1965 Archeological Excavations at Santa Rosa Pensacola
Florida State University Notes in Anthropology Vol. 10

Social Sciences Research Council

- 1954 Acculturation: An Explanatory Formulation
American Anthropologist 56:973-1002

Solana, Juan Jose

- 1758 Manuscript, A.G.I., 86-6-6/12
(Juan Jose Solana to the Spanish Crown.
Dec. 9, 1758)
Photostat in S. C. U. F.

Solana, Juan Jose

- 1760 Manuscript, A.G.I., 86-7-21/41
(Report of Juan Jose Solana to the Spanish Crown
Concerning Conditions in St. Augustine.
April 9, 1760)
Photostat in S.C.U.F.

South, Stanley

- 1964 An Analysis of the Buttons from Brunswick
Town and Fort Fisher
Florida Anthropologist 27 (2):113-133

South, Stanley

- 1972 Evolution and Horizon as Revealed in Ceramic
Analysis in Historic Archeology
Conference on Historic Sites Archeology Papers
Vol. 6

South, Stanley

- 1974 Evaluation of Analysis Situations Relative to
the Archeological Data Bank
Paper Presented at 14th Annual
Conference on Historic Site Archeology
Memphis, Tennessee

Spicer, Edward

- 1958 Social Structure and the Acculturation Process
American Anthropologist 60:433

Spicer, Edward

- 1960 Cycles of Conquest
Tucson, University of Arizona Press

Spicer, Edward

- 1961 Types of Contact and Processes of Change
in Spicer (ed.) Perspectives in American
Indian Culture Change pp. 517-544
Chicago, University of Chicago Press

Sturtevant, William C.

- 1962 Spanish-Indian Relations in Southeastern
North America
Ethnohistory 9 (1):41

Swanton, John R.

- 1922 The Early History of the Creek Indians
and Their Neighbors
Bureau of American Ethnology Bulletin #72

Swanton, John R.

- 1946 Indians of the Southeastern United States
Bureau of American Ethnology Bulletin #137

Tebeau, Charles

- 1971 A History of Florida
Miami, University of Miami Press

Tepaske, John J.

- 1969 The Governorship of Spanish Florida 1700-1763
Curham, Duke University Press

Thomson, Sir Arthur L.

- 1964 A New Dictionary of Birds
New York, McGraw-Hill

UFAL

University of Florida Anthropology Laboratory
Notes and Collections
Gainesville

Valdes, Juan

- 1729 Manuscript, A.G.I., 58-2-16/25
(Juan Valdes, Bishop of Cuba to the Spanish Crown.
Jan. 14, 1729)
Photostat in S.C.U.F.

Walker, Iain C.

- 1971 An Archeological Study of Clay Pipes from the King's
Bastion, Fortress of Louisberg
Canadian Historic Sites Occasional Papers
in Archeology and History #2:55-122

Watson, Patty Jo, Steven LeBlanc and Charles Redman

- 1971 Explanation in Archeology
New York, Columbia University Press

Wenhold, Lucy

- 1936 A 17th Century Letter of Gabriel Diaz Vara de Calderon,
Bishop of Cuba
Smithsonian Miscellaneous Collections 95 (16)

Witthoft, John

- 1966 A History of Gunflints
Pennsylvania Archeologist 26 (1-2)

Zubillaga, Felix (ed.)

- 1946 Monumenta Antiquae Floridae (1566-1572)
Monumenta Historica Societatis Iesu 69

Zuniga, Joseph de

1702 Manuscript, A.G.I., 58-2-8

(Governor Joseph de Zuniga to the Spanish Crown.
Nov. 10, 1702)

Photostat in S.C.U.F.

APPENDIX I

Dating the Site: South's Mean Ceramic Date Formula

<u>Dateable Ceramics</u>	<u> #(fi)</u>	<u>midpoint (xi)</u>	<u>product (fi.xi)</u>
Creamware	158	1771	279818
Wheildon ware	12	1755	21060
Agate ware	26	1758	45708
Jackfield	6	1760	10560
Astbury ware	11	1738	19118
Slip Decorated Earthenware	130	1733	225290
Blue and White Delftware	129	1750	225750
Plain Delftware	62	1720	106640
White Salt-Glazed Stoneware	15	1753	26295
Brown Salt-Glazed Stoneware	7	1733	12131
Nottingham Stoneware	15	1755	26325
Blue and White Chinese Porcelain	24	1730	41520
Total	<u>595</u>		<u>1040215</u>

$$\text{Date} = \frac{\sum xi \cdot fi}{\sum fi}$$

$$\text{Date} = 1748.26$$

Since the initial date of the site's occupation is unknown, it is difficult to determine the exact occupational midpoint through documentary sources. Assuming that the date of initial occupation falls between 1730 and 1740, the documentary midpoint of site occupation would fall between 1746.5 and 1752.5.

The mean ceramic date produced by South's formula (South 1973) falls within this range, and suggests a pre-1750 midpoint. The data pertaining to the dates for Creamware occurrence at the site, discussed in Chapters III and IV, suggests that the midpoint for Creamware should be slightly earlier. If, as this study suggests, the range of Creamware is from 1750 to 1780, the midpoint should be 1755 instead of 1771. This would also produce a slightly earlier date, according to South's formula; and also support the earlier date of 1730 as the beginning of the de la Cruz site occupation.

APPENDIX II

Dating the Site: Pipestem Dating Formulas

The use of white clay pipestems as a dating tool for historical archeologists has been developed over the last two decades by Harrington (1954), Binford (1962), Heighton and Deagan (1972) and others. Based on Harrington's original observation that the borehole diameter of these pipes decreased over time (from ca. 1600 to ca. 1800), mathematical formulas have been developed which, when applied to the pipestem sample from a site, will produce a mean date for the site.

The Binford Formula, a straight-line regression based on Harrington's original (unpublished) data; and also the Heighton-Deagan formula, which describes a decay curve which was constructed on the basis of data from sites (including Harrington's published data) will be applied to the sample from SA-16-23. This will act not only as an aid to dating the site, but will also provide a test for these dating formulas.

Stem Data from SA-16-23--All Proveniences

<u>Diameter</u>	<u>Kitchen</u>	<u>Courtyard</u>	<u>Midden</u>	<u>Outbuilding</u>	<u>Total</u>
4/64	12	46	21	6	85
5/64	9	58	39	9	115
6/64		4	2		6
7/64			5		5
					<u>211</u>

Mean stem diameter 4.64

Stem Diameters from SA-16-23--Closed 18th Century Proveniences

<u>Diameter</u>	<u>Kitchen</u>	<u>Courtyard</u>	<u>Midden</u>	<u>Outbuilding</u>	<u>Total</u>
4/64	8	8	2	1	19
5/64	7	15	9	1	32
6/64		1	1		2
					<u>53</u>

Mean stem diameter 4.68

The Binford Formula

$$Y = 1931.85 - 38.26x$$

Y = mean site date x = mean stem diameter

for site's total stem sample Y = 1754.32

for site's closed provenience stem sample Y = 1752.79

The Heighton-Deagan Formula

$$X = \frac{-\log Y + 1.04435}{.5342} \quad \text{Date} = 1600 + 22X$$

Y = mean stem diameter X = 7.07

for site's total stem sample Y = 1755.54

for site's closed provenience stem sample Y = 1754 (X = 7.00)

Discussion

The dates produced by the pipestem dating formulas are somewhat later than those produced by South's mean ceramic date formula, and also somewhat later than the suggested midpoint of site occupation by documentary sources. As it would be expected, the dates for the site, using the entire stem sample (211), was later than the date using only the sample from closed proveniences.

Two reasons for the late pipestem dates may be suggested:

1. Size of the sample--the number of pipes from closed proveniences was only 53, which could have skewed the results. It is the opinion of this study, as well as Heighton and Deagan (1972) that 100 stems is the minimum, statistically valid sample.
2. The test is based on the bore diameters of British, Dutch, and probably some Spanish pipestems. All previous bore-diameter dating research has been done on British pipes only, and nothing is known of the relationship with time of Dutch or Spanish pipe bore holes. This, plus the added factor of the very small sample, could well have distorted the true pipestem date for the site.

APPENDIX III

Olive Green Wine Bottle Measurement Data

<u>Bases</u>	<u>Diameter</u>	<u>Kickup Height</u>	<u>*Glass Thickness</u>
1.	9 centimeters	5.8 centimeters	.5 centimeters
2.	9 centimeters	4.0 centimeters	.6 centimeters
3.	8 centimeters	3.2 centimeters	.6 centimeters
4.	9.6 centimeters	4.1 centimeters	
5.	9 centimeters	3.0 centimeters	.5 centimeters
6.	9.5 centimeters	3.3 centimeters	.6 centimeters
7.	10 centimeters		.5 centimeters
8.	8 centimeters	3.8 centimeters	.5 centimeters
9.	9 centimeters	3.4 centimeters	.5 centimeters
10.	8 centimeters	3.2 centimeters	.5 centimeters
11.-17. too fragmentary for measurements			

Mean base diameter = 8.95 centimeters

Mean kickup height = 3.75 centimeters

Mean glass thickness = 5.33 centimeters

<u>Necks</u>	<u>Orifice Diameter</u>	<u>Lip Diameter</u>	<u>**Neck Length</u>
1.	2.2 centimeters	3.5 centimeters	7.5 centimeters
2.	1.8 centimeters	2.9 centimeters	9.5 centimeters
3.	2.3 centimeters	3.8 centimeters	
4.	2.2 centimeters	3.2 centimeters	8.5 centimeters
5.	2.0 centimeters	3.3 centimeters	11.6 centimeters
6.	2.2 centimeters	3.5 centimeters	8.5 centimeters
7.	2.0 centimeters	3.1 centimeters	
8.	2.2 centimeters	3.2 centimeters	9.1 centimeters
9.-10. too fragmentary for measurement			

Mean orifice diameter = 2.11 centimeters

Mean lip diameter = 3.38 centimeters

Mean neck length = 9.12 centimeters

* Measured at wall of bottle, three centimeters above base

** Measured from shoulder to lip

Case Bottle Data

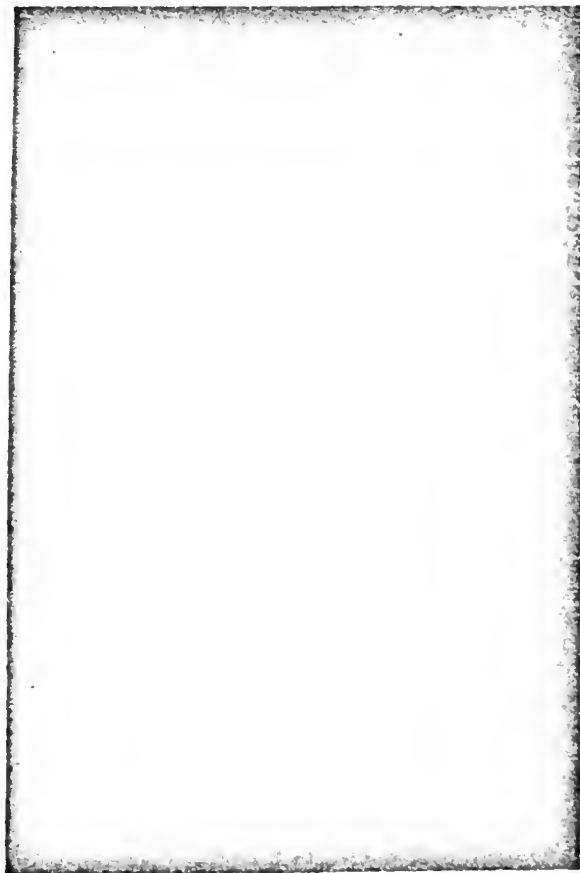
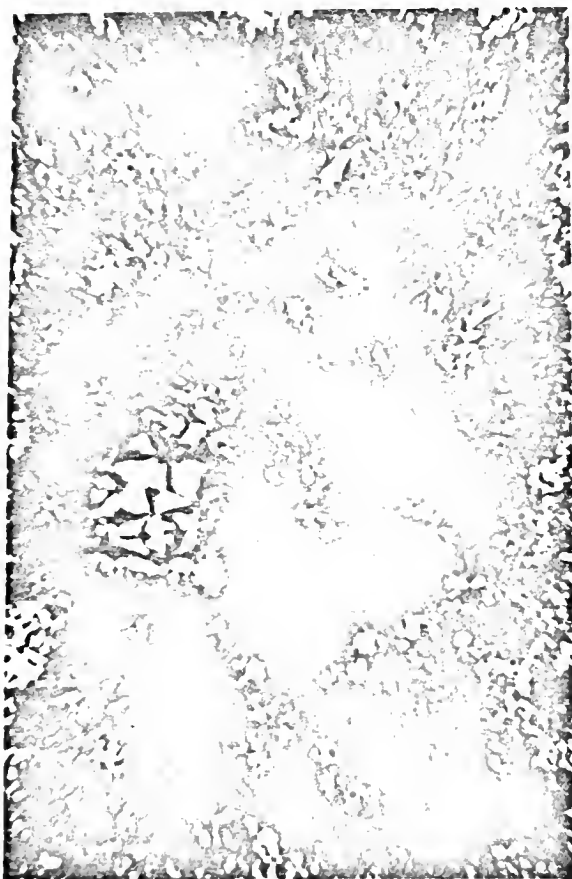
<u>Bases</u>	<u>Diameter</u>
1.	7 centimeters
2.	8 centimeters
3.	8 centimeters
4.	7 centimeters

Mean Base Diameter - 7.5 centimeters square

APPENDIX IV

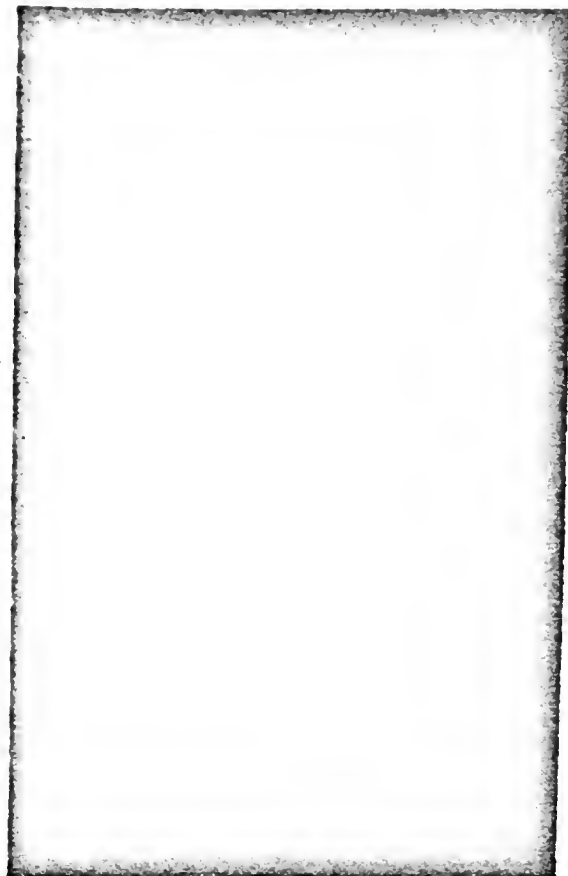
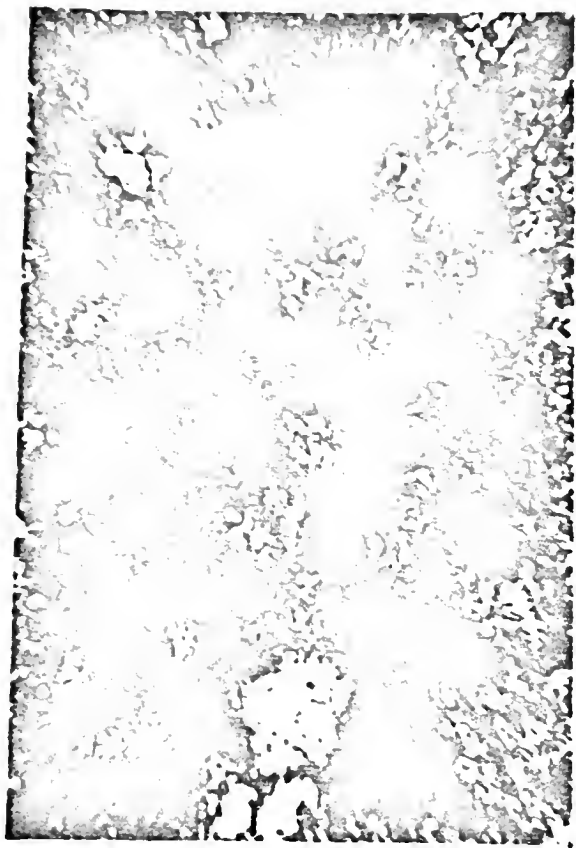
Results of Petrographic Thin Section Analysis

by F. N. Blanchard



SA - 16 - 23 - 92 Picture Description: a. Cross Polars (10x objective)
b. Plain Light (10x)

Thin Section Description: Microcrystalline quartz, .002 to .01 mm. Plain light section looks "pock-marked". Pocks might be replaced microfossils. Minor fibrous quartz. Minor carbonate relicts. Some elongate "ghosts".



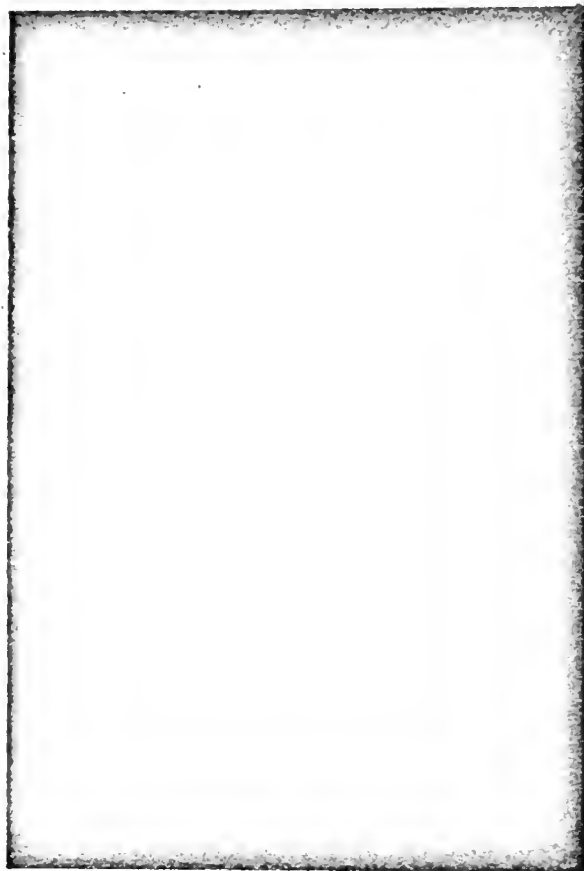
SA- 16- 23-29 Picture Descriptions: a. Cross Polars (10x objective)
b. Plain Light (10x objective)

Thin Section Description: .004 to .01 mm. microcrystalline quartz. Rectangular fracture pattern. Brownish pocks are of more finely crystalline quartz. Pocks or patches have refractive index slightly different than surrounding quartz. They are about .05 mm. and distributed rather uniformly throughout mass. Some of the quartz is distinctly fibrous chalcedony. Numerous rhombic-shaped carbonate relicts ranging in size from .01 mm. to .1 mm. Yellow-brown patches about .04 mm are possibly iron oxide. Some unidentifiable deep red specks are also present.



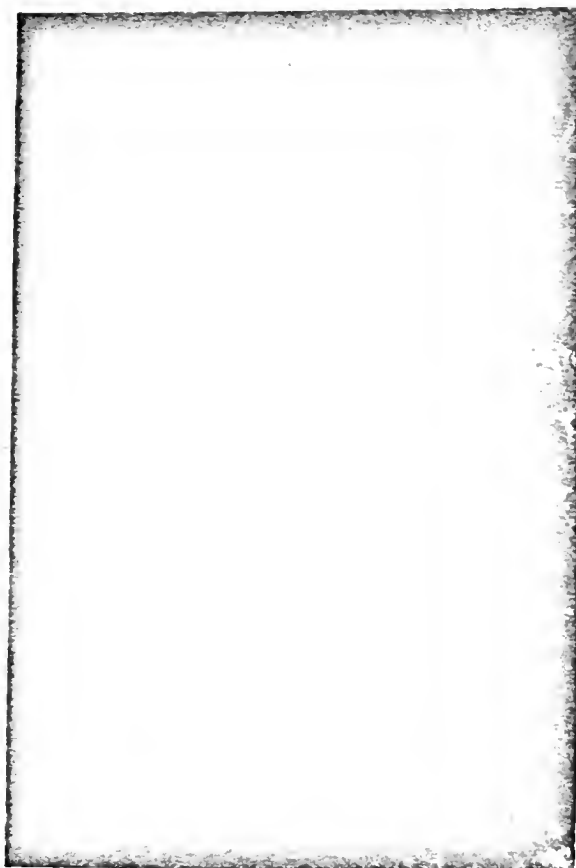
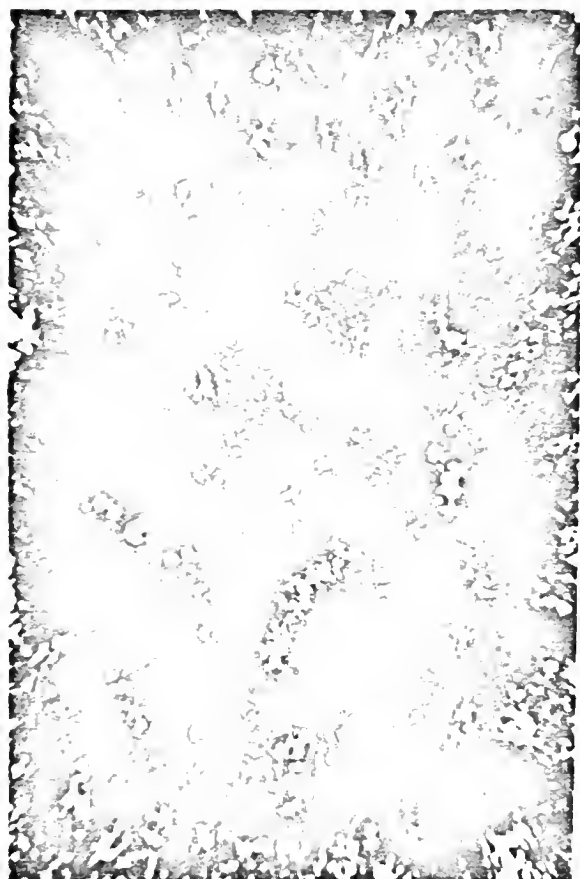
SA-16-23-93 Picture Description: a. Cross polars (10x objective)
b. Plain light (10x objective)

Thin Section Description Microcrystalline Quartz .002 to .01 mm.
Carbonate relicts up to .2 mm. Some chalcedonic patches. May be some
relict microfossils. Sub-trellislike fracture pattern (If the micro-
fossils could be identified we could determine that the material was
non-Florida if the fossils predated the Eocene).



SA-16-23-103 Picture Descriptions: a. Cross Polars (10x objective)
b. Plain light (10x objective)

Thin Section Description: Silicified Coral. Microcrystalline quartz .003 or less, up to .01 mm. Fibrous quartz (chalcedonic) about .01 to .06 mm. There is considerable difficulty in assigning this coral a pre- or post-Eocene date.



SA-16-23-38 Picture Description: a. Cross Polars (10x objective)
b. Plain Light (10x objective)

Thin Section Description: Dirty Chert. .003 to .01 mm. microcrystalline quartz. Black patches, probably organic in structure; possibly relict microfossils. Chalcedonic quartz in some areas -- minor. Some elongate "ghosts". Polygonal fractures. Some yellow-brown patches.

FIGURES

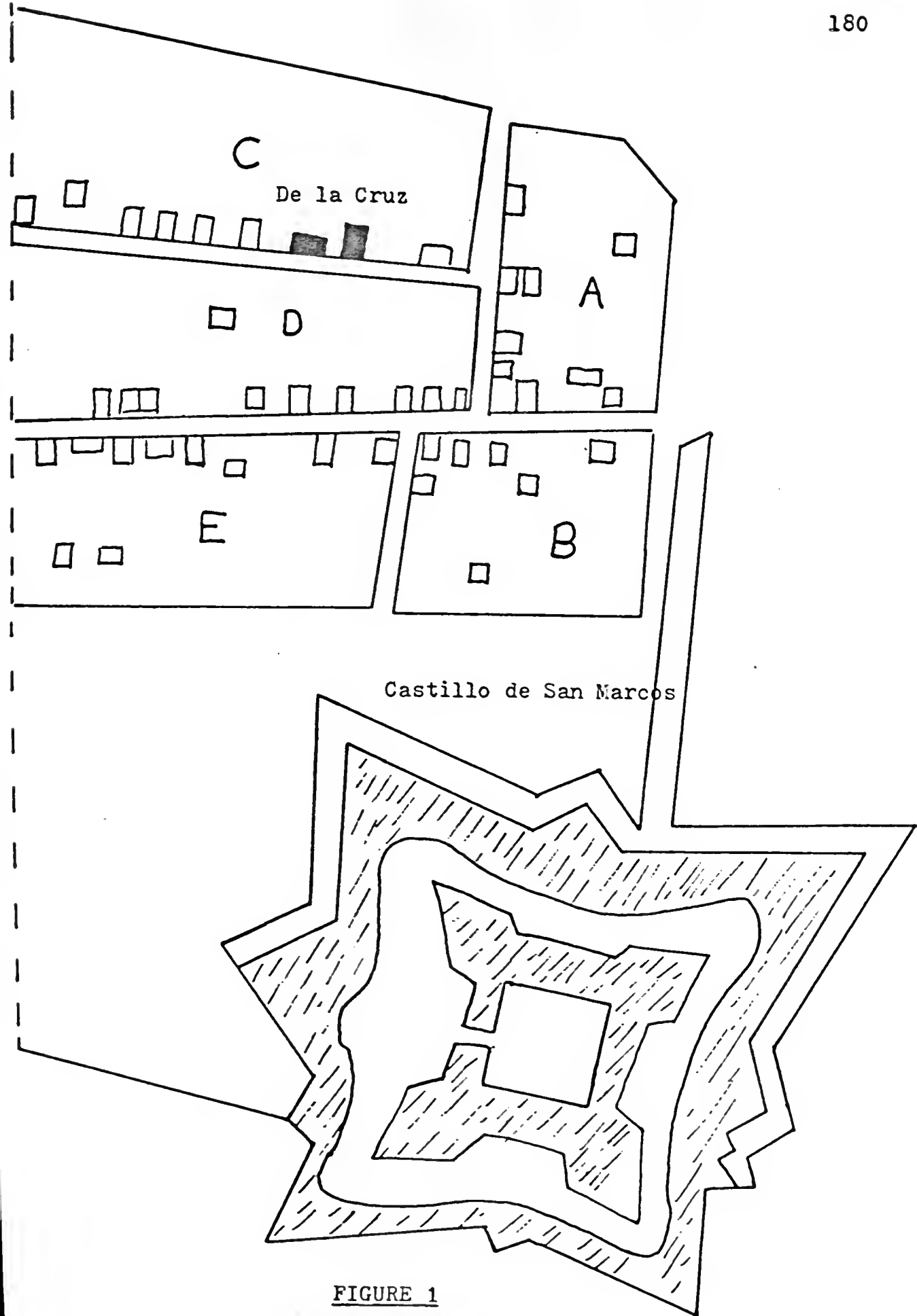


FIGURE 1

The Puente Map

Northwest portion of "Plano de la R. Fuerza Baluartes etc."

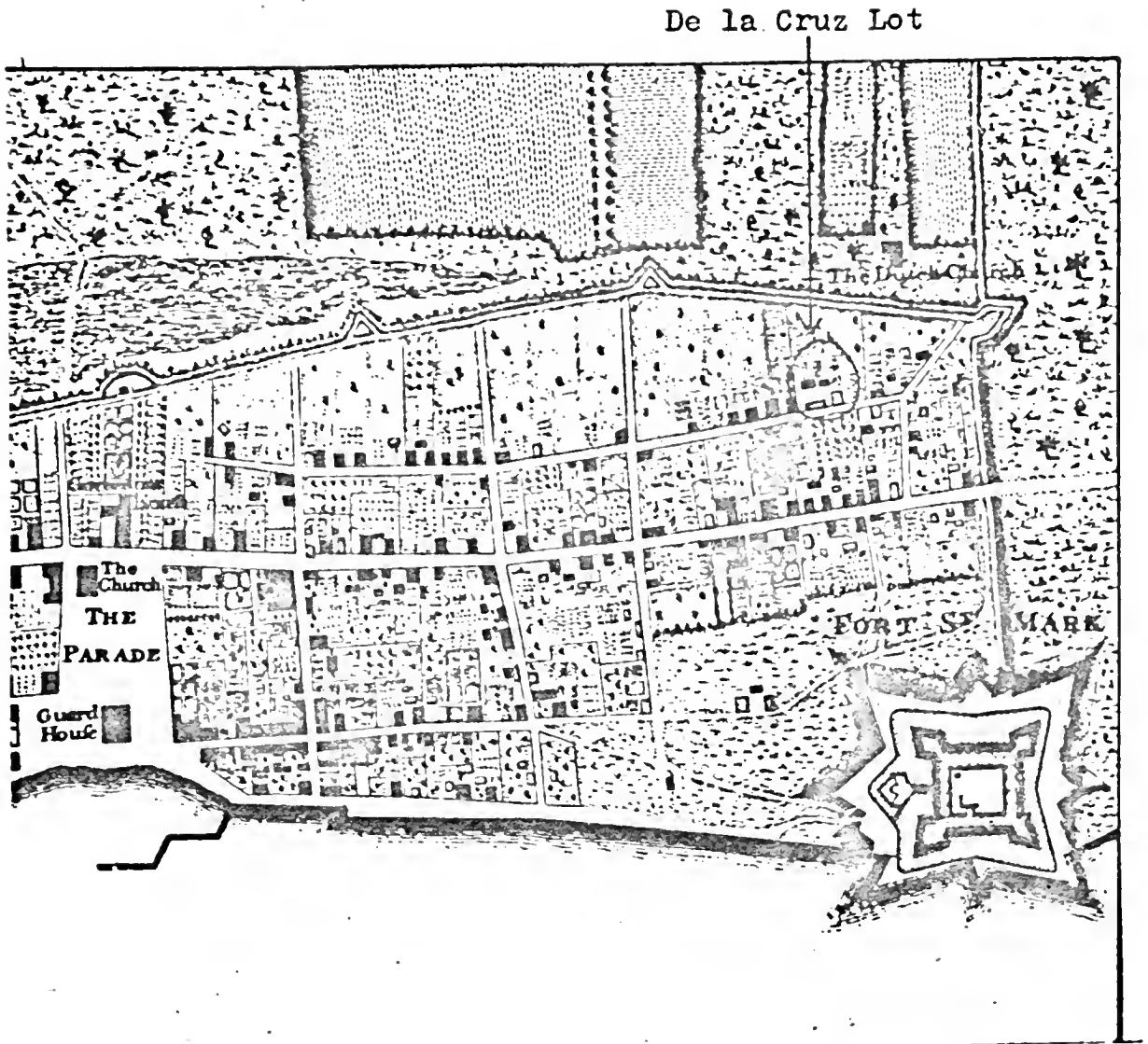


FIGURE 2
The Jeffries Map

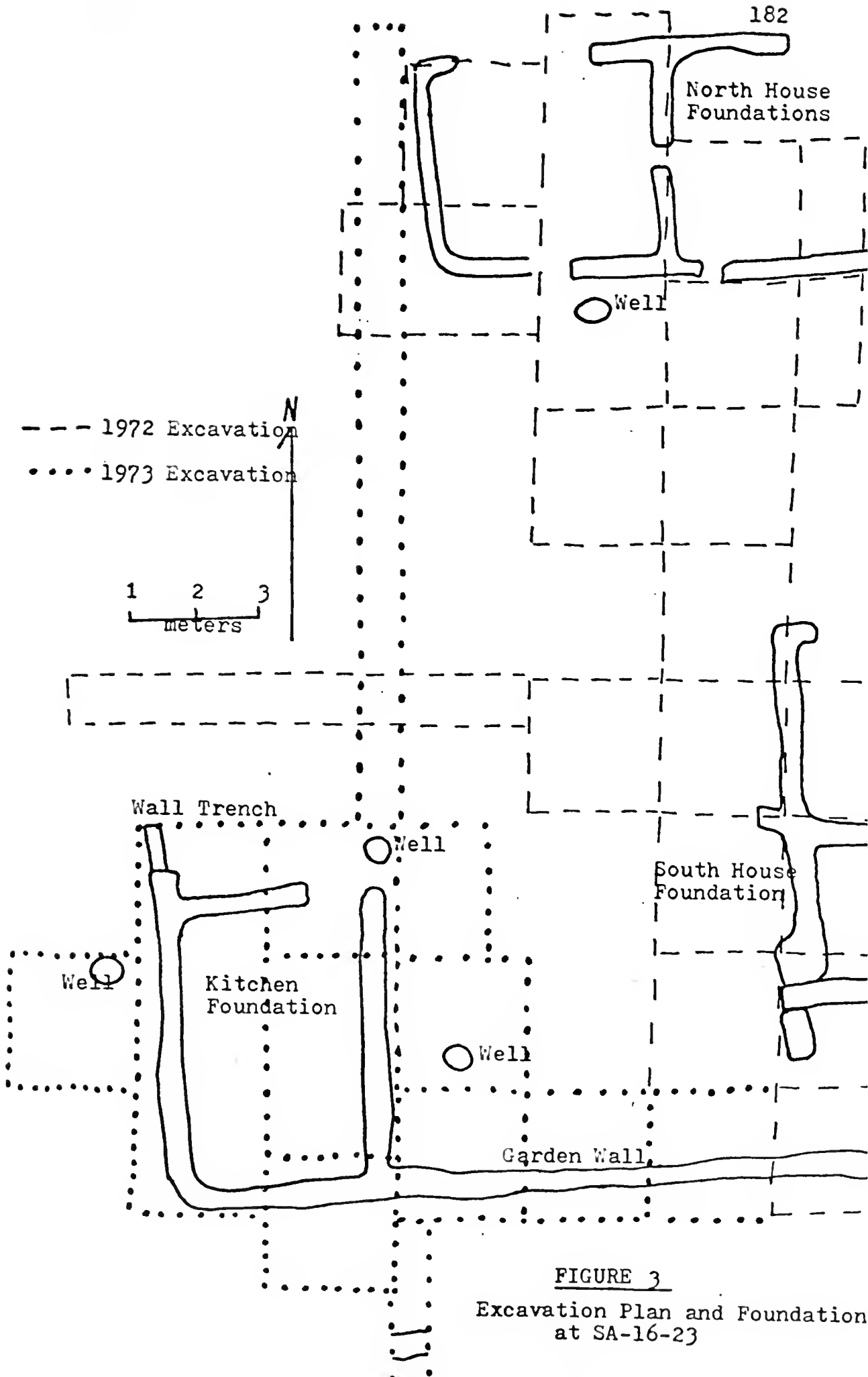




FIGURE 4

Water Disposal Technique at SA-16-23

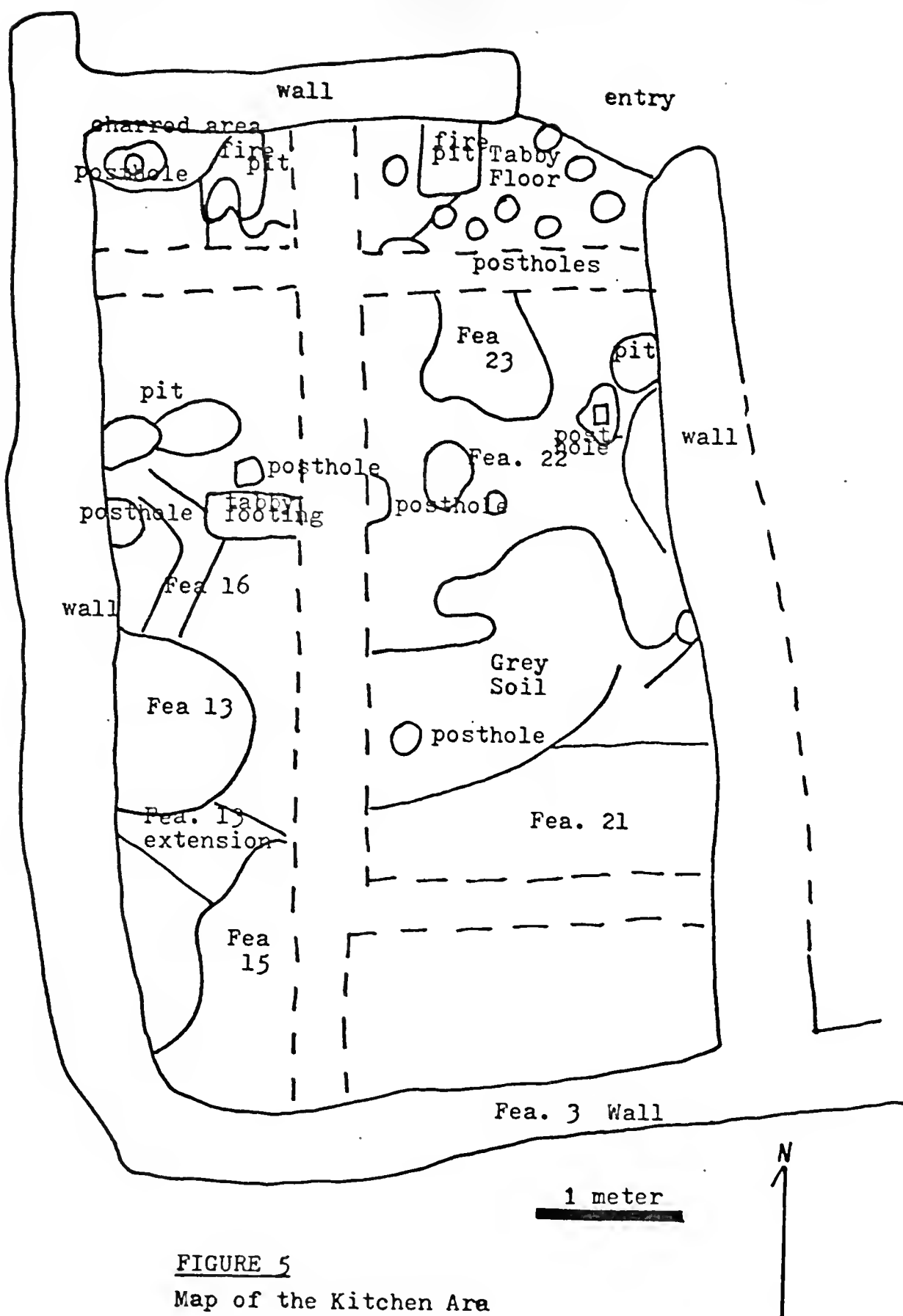


FIGURE 5
Map of the Kitchen Area

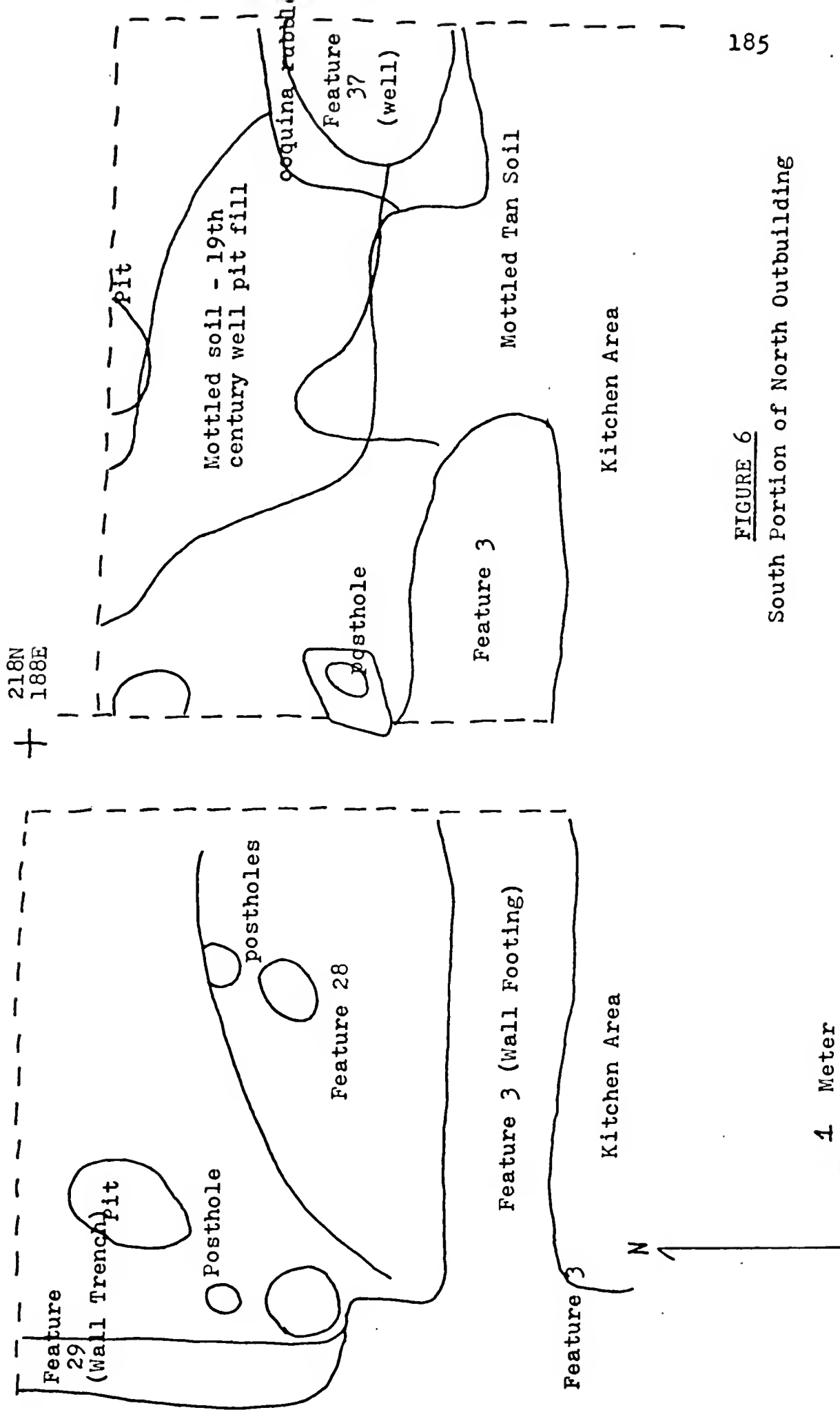


FIGURE 6

South Portion of North Outbuilding

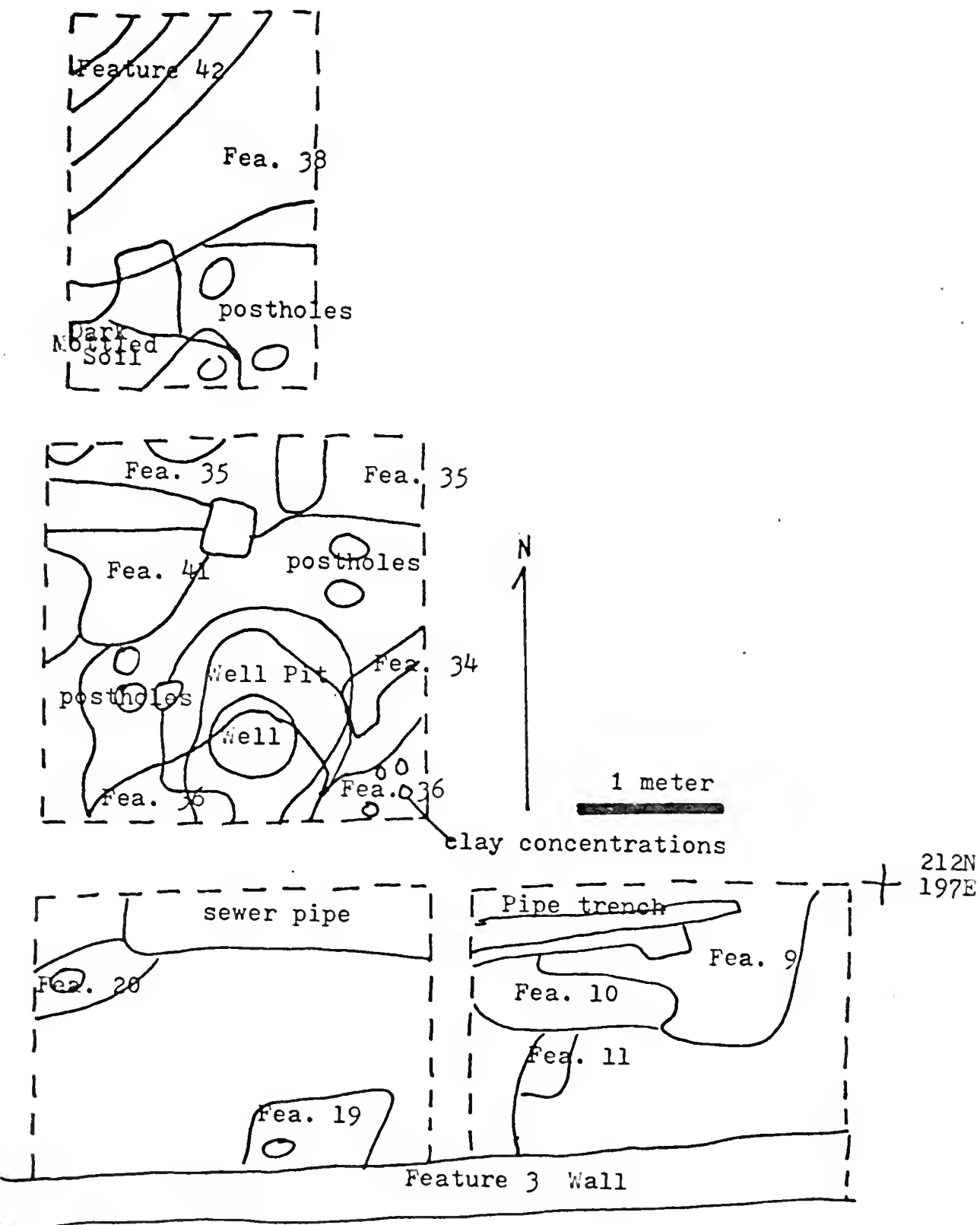


FIGURE 7

Map of the Courtyard Area

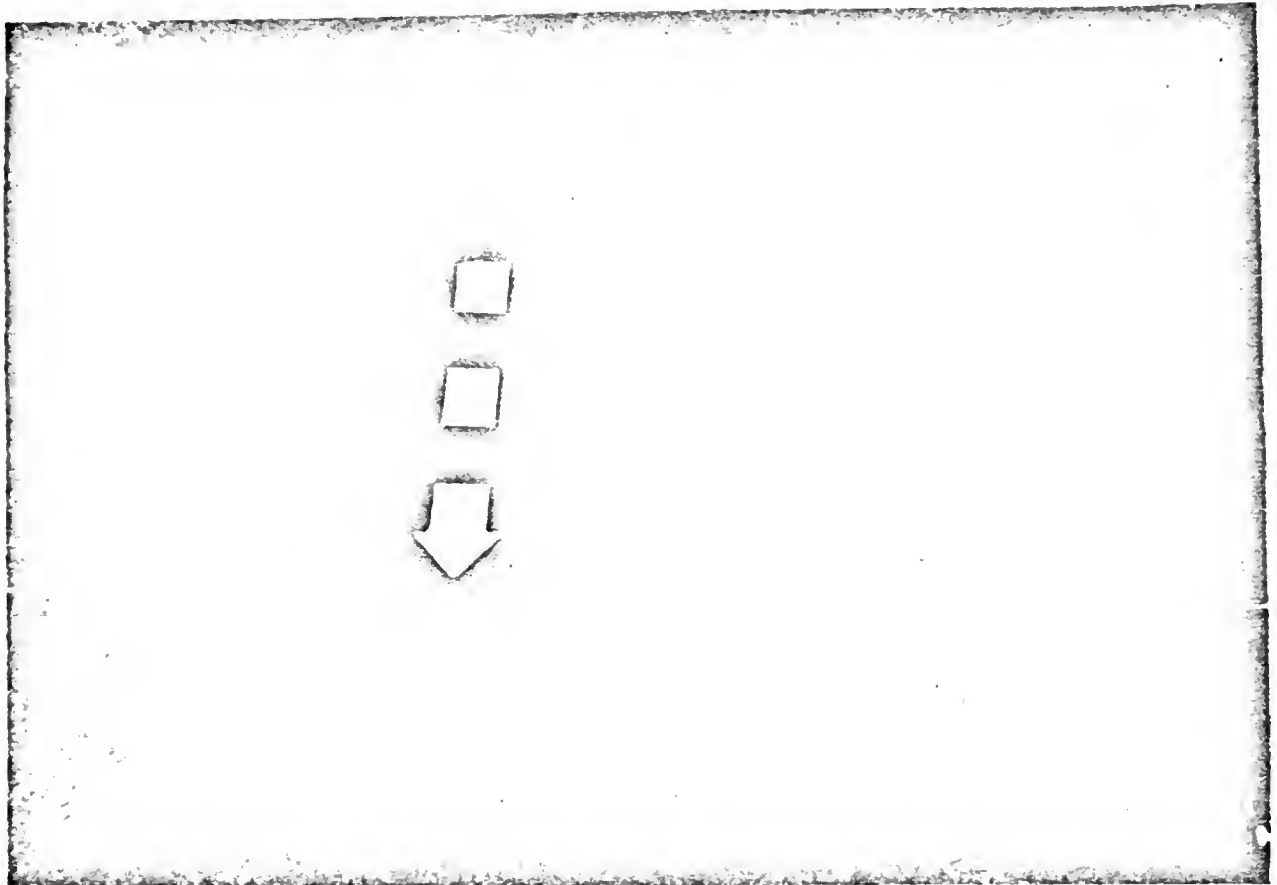


FIGURE 8
First Appearance of Barrel Well

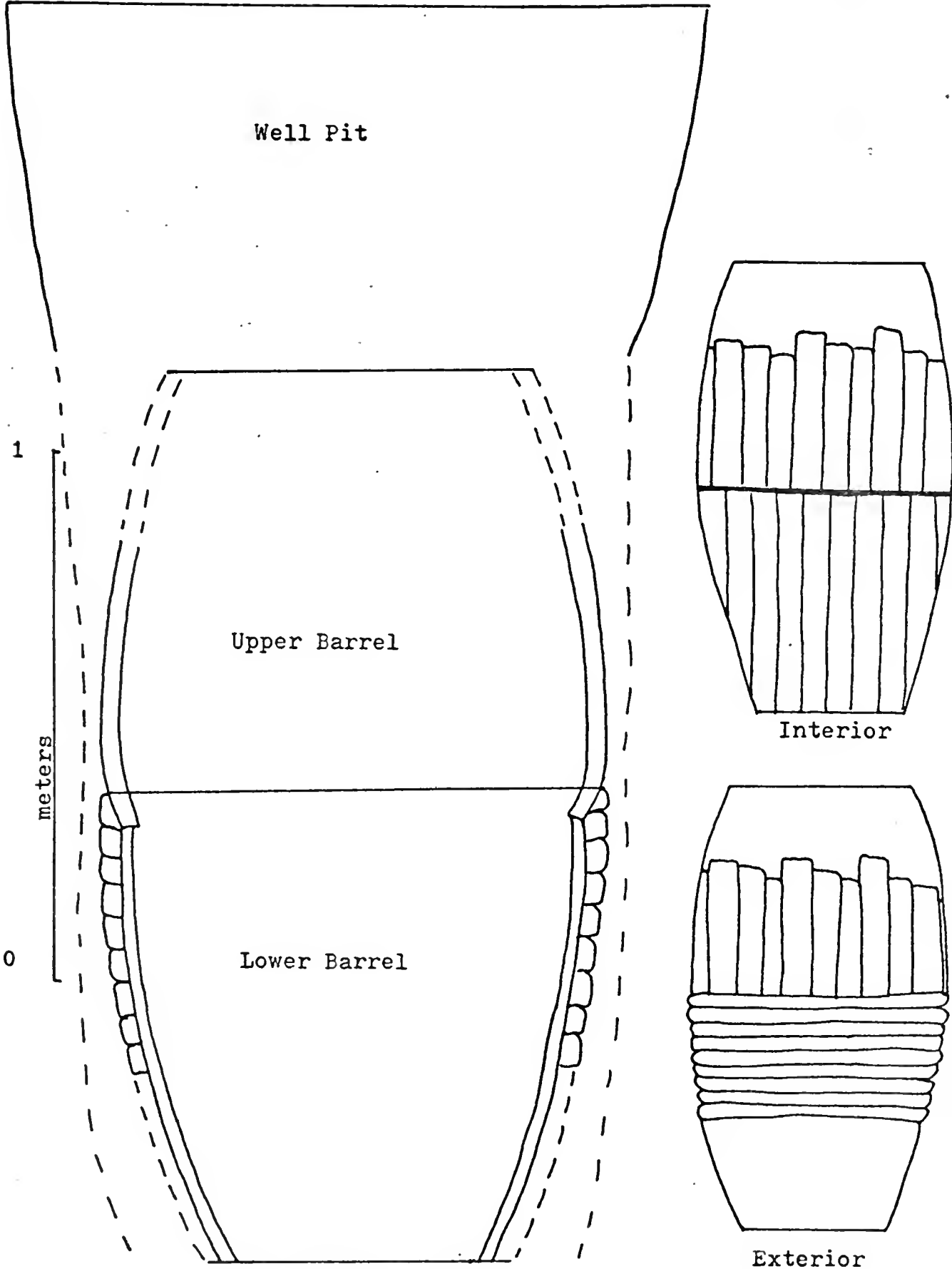


FIGURE 9

Profile of Barrel Well

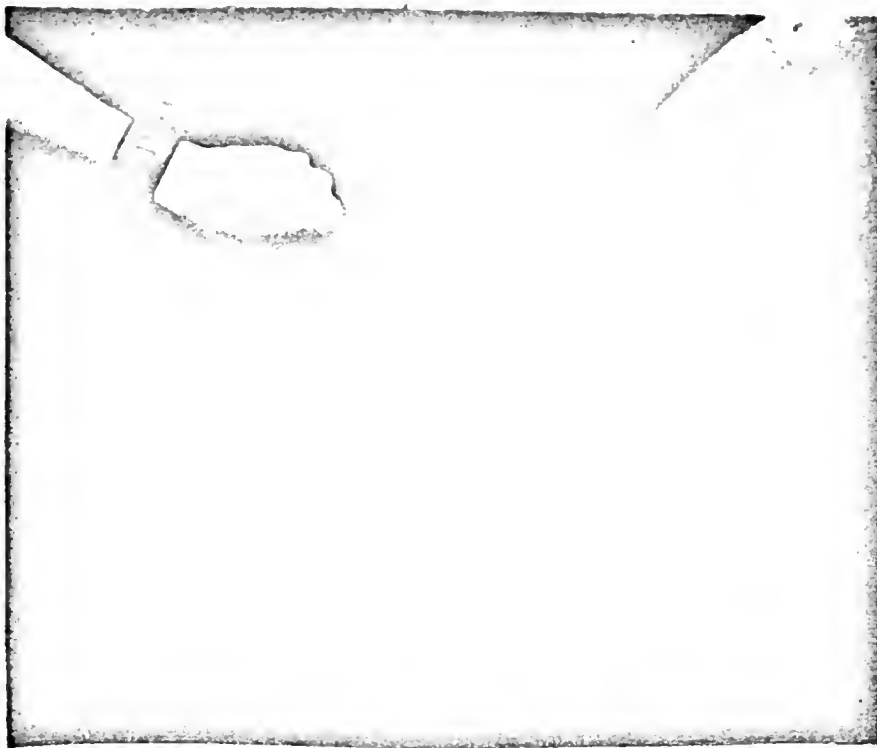


FIGURE 10a Excavation of Barrel Well

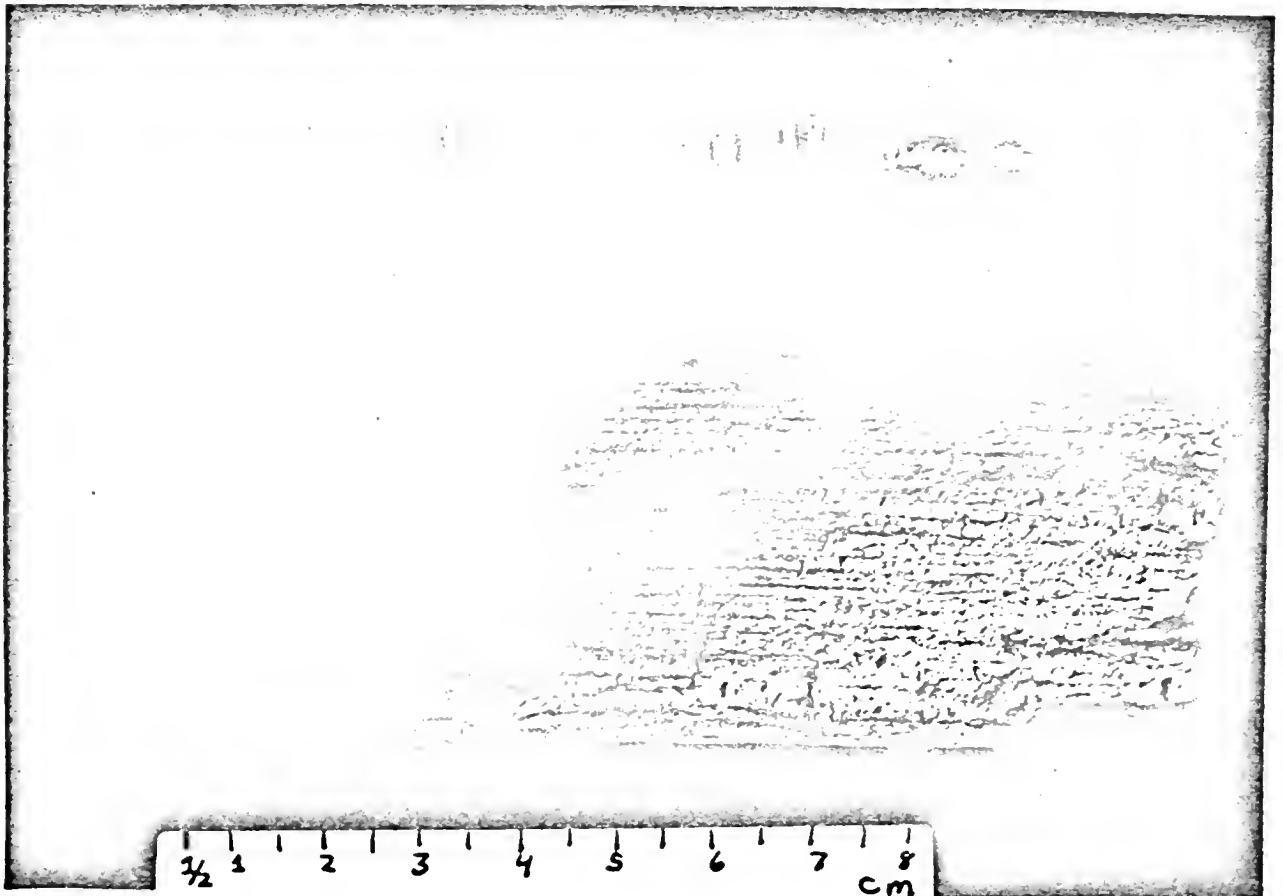


FIGURE 10b Staves from Barrel Well

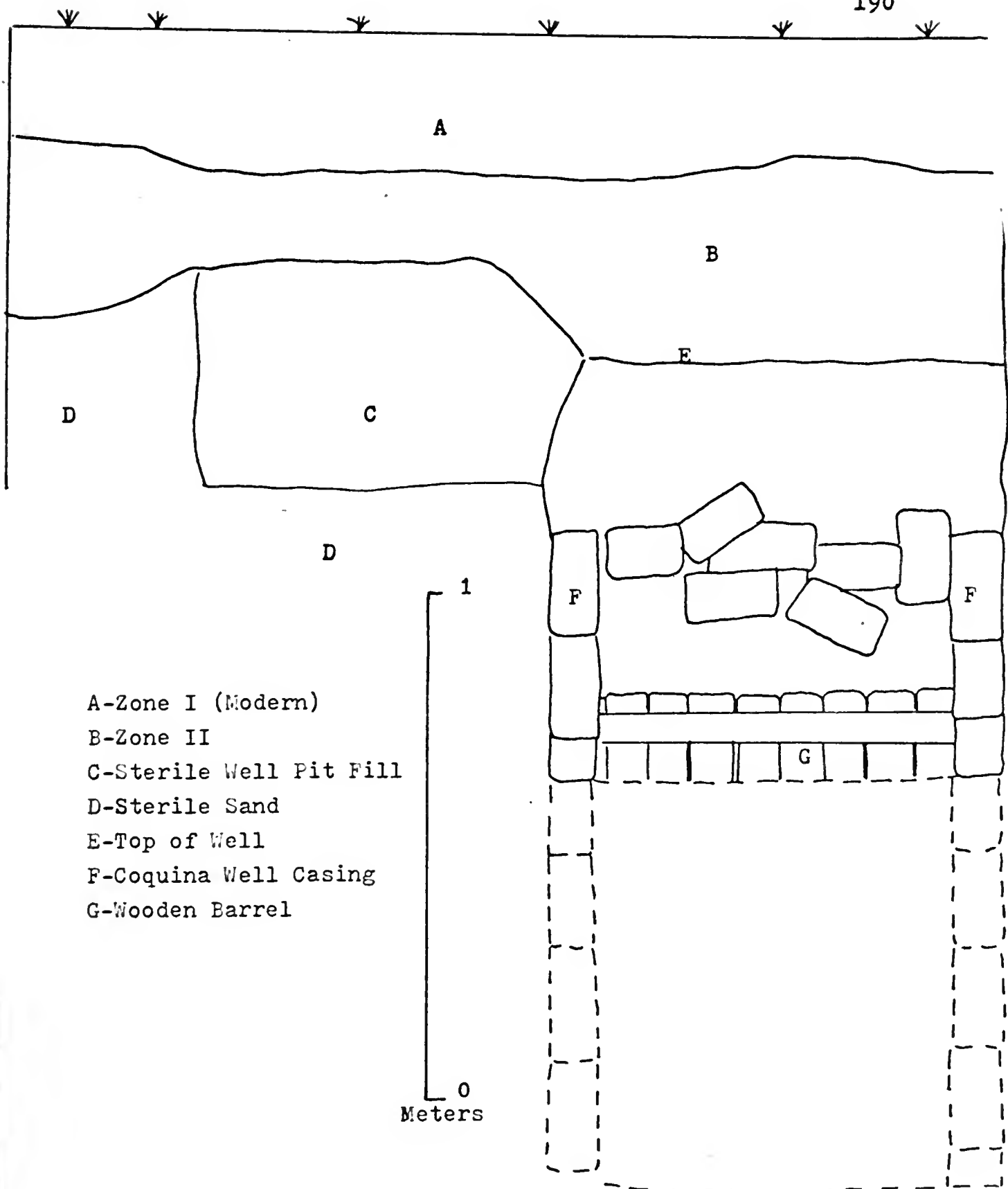


FIGURE 11
 Profile of Coquina Well

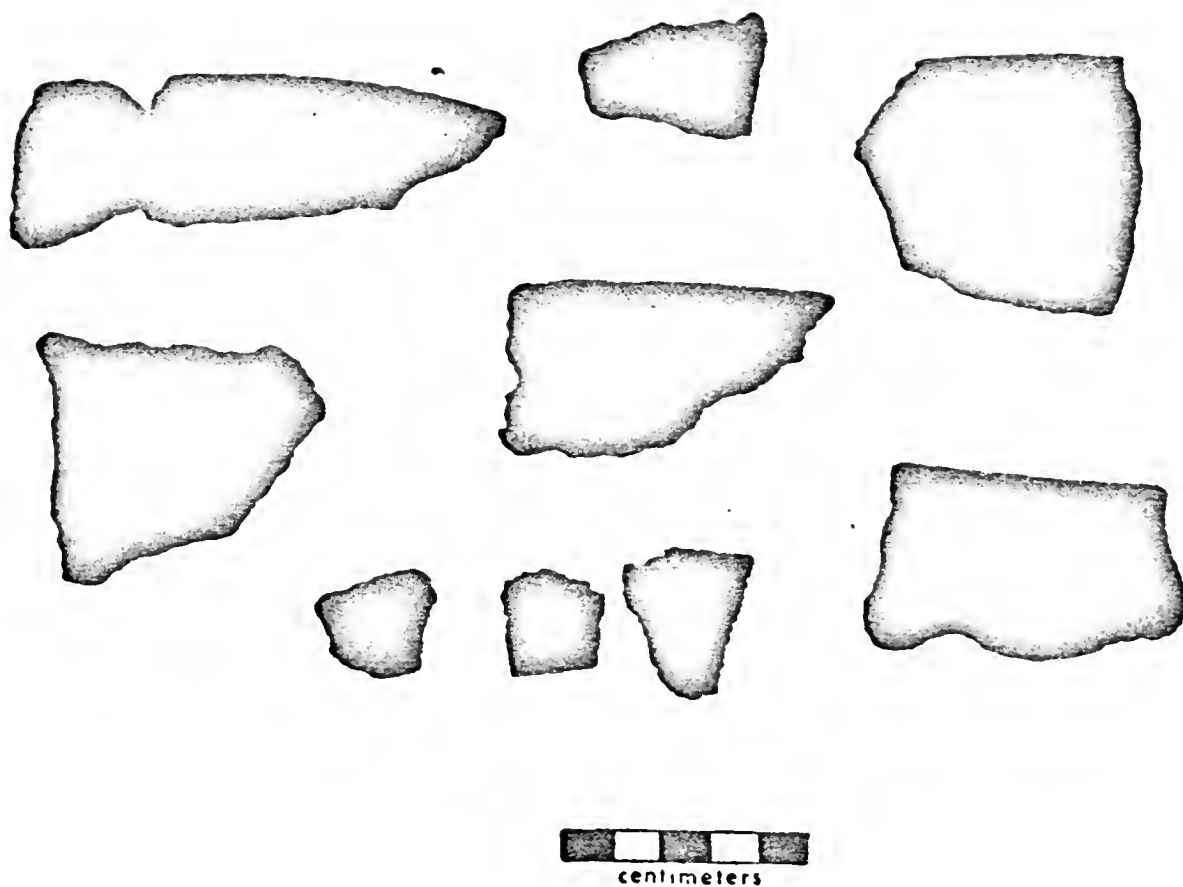


FIGURE 12
San Marcos Stamped Sherds

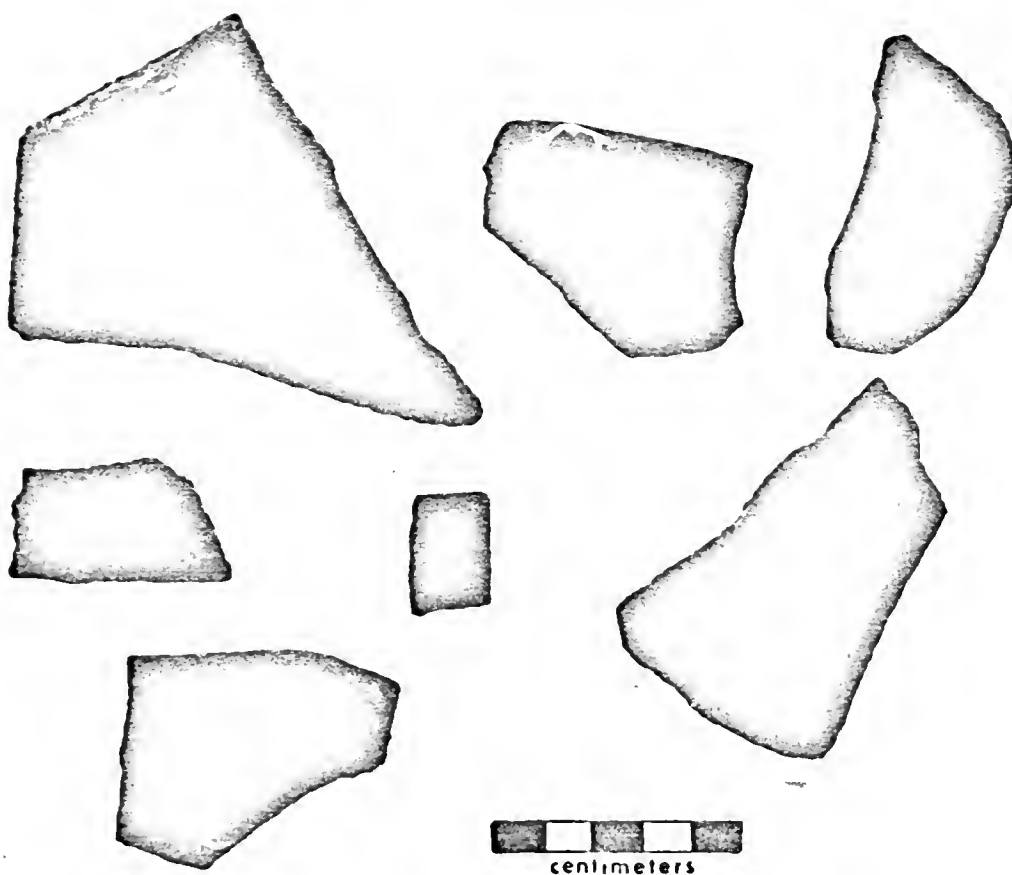


FIGURE 13

Spanish Utilitarian Earthenware

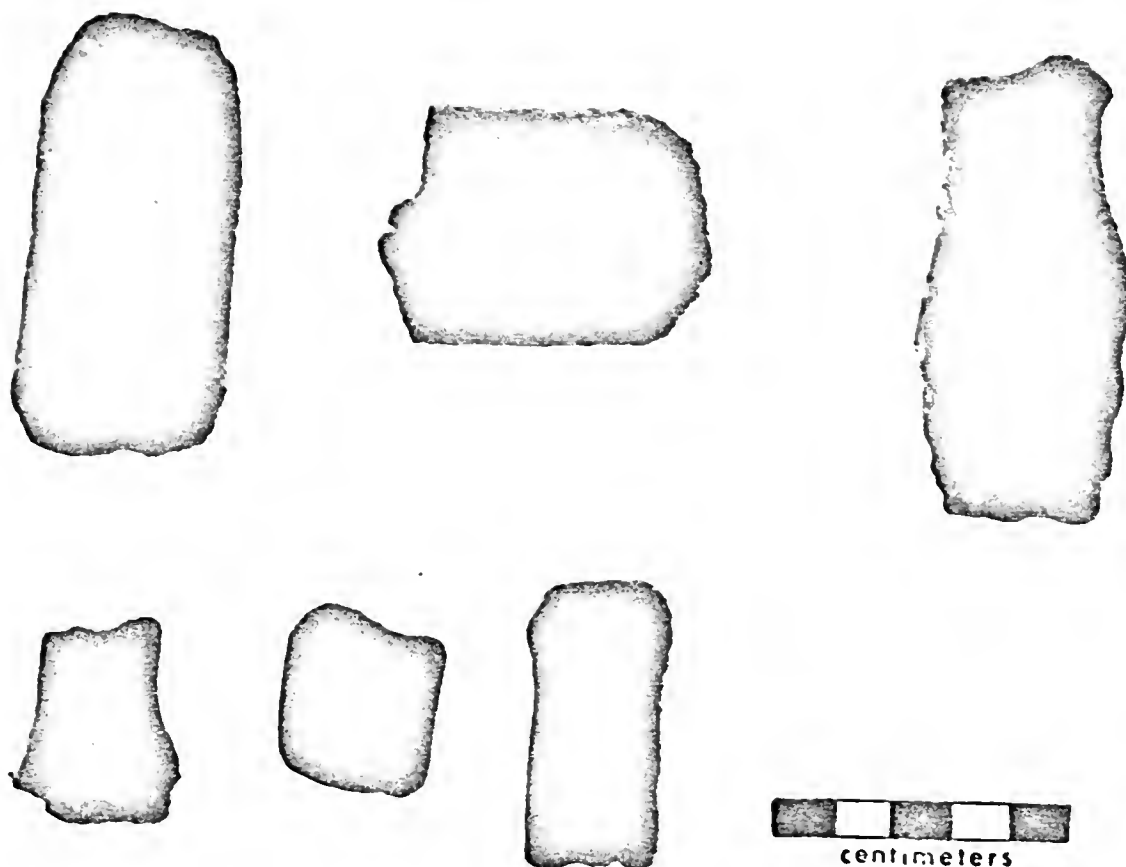


FIGURE 14

Handles from San Marcos Vessels

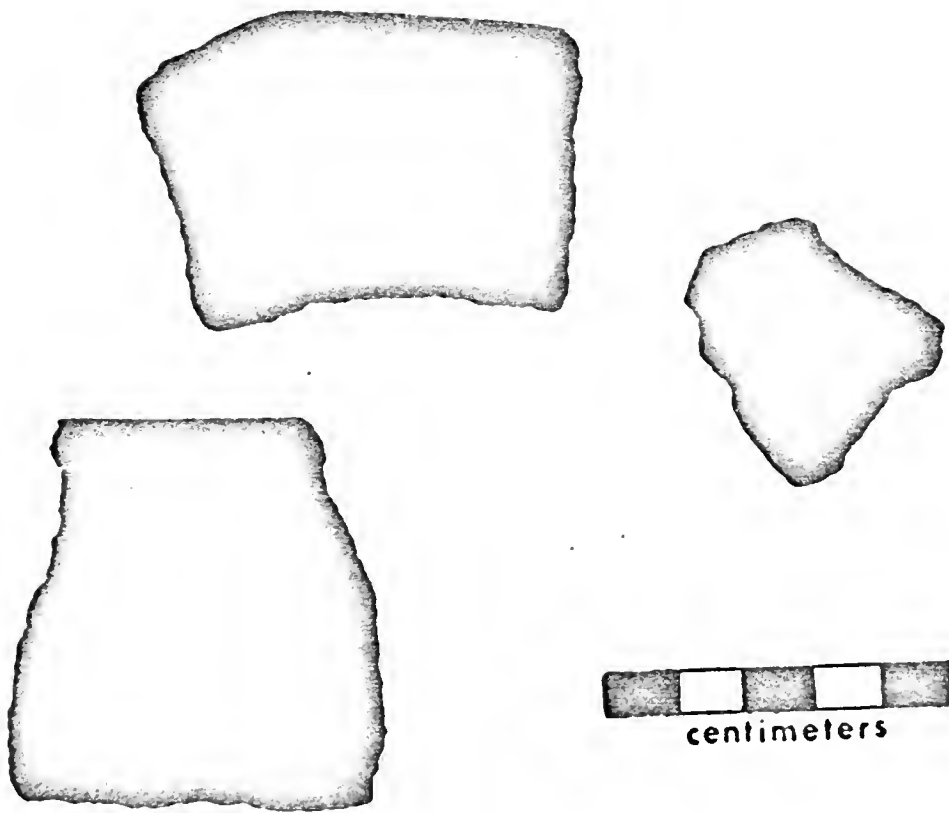


FIGURE 15

San Marcos Ceramics Exhibiting
European Influence

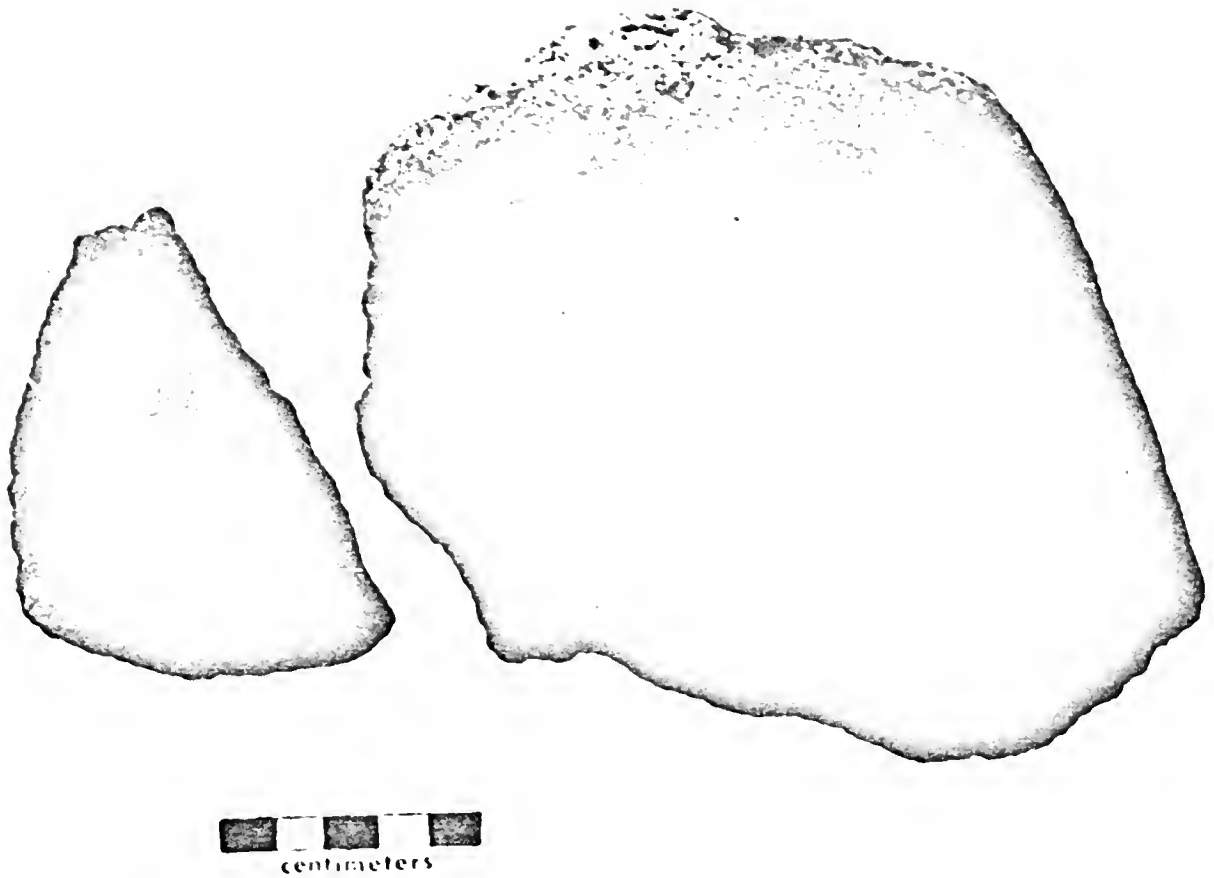


FIGURE 16

Non-ceramic Food Preparation Equipment
left; sherd griddle fragment
right; basalt metate fragment

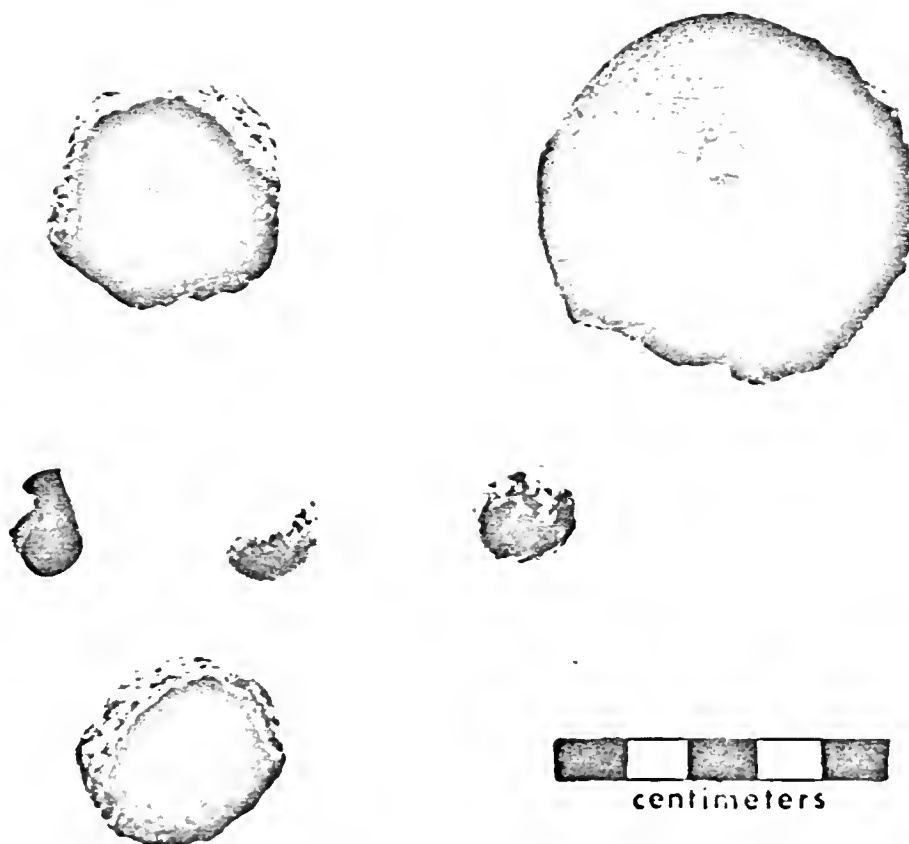


FIGURE 17

Sherd Discs, Marbles and Child's Thimble

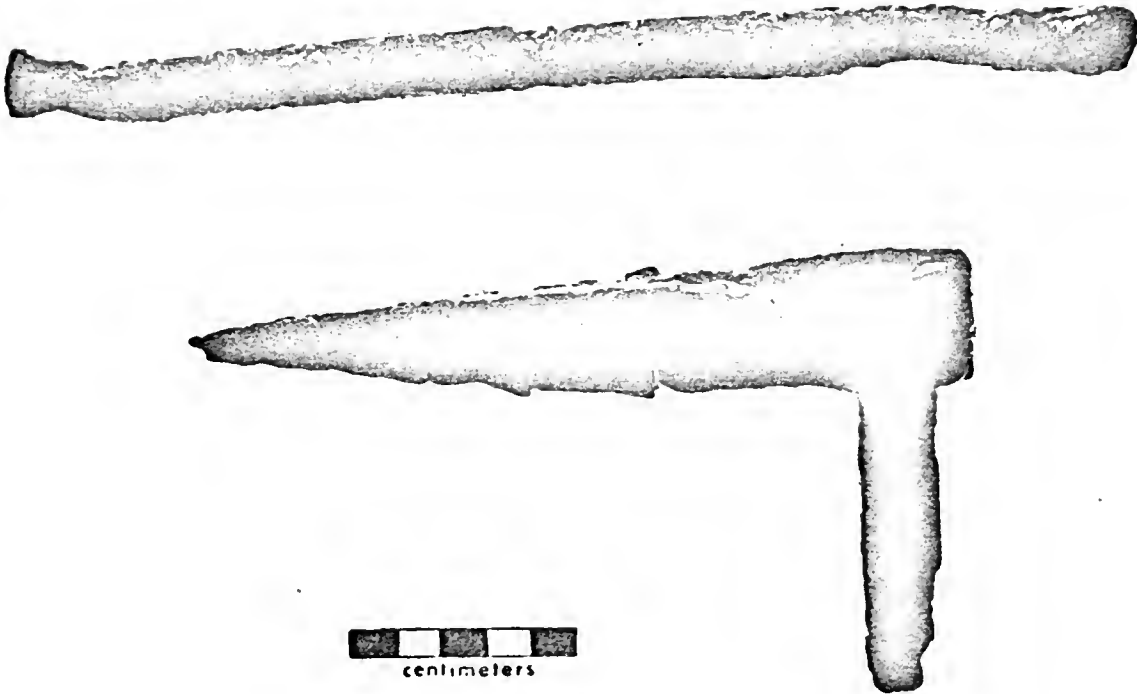


FIGURE 18

Iron Hinge and Iron Spike

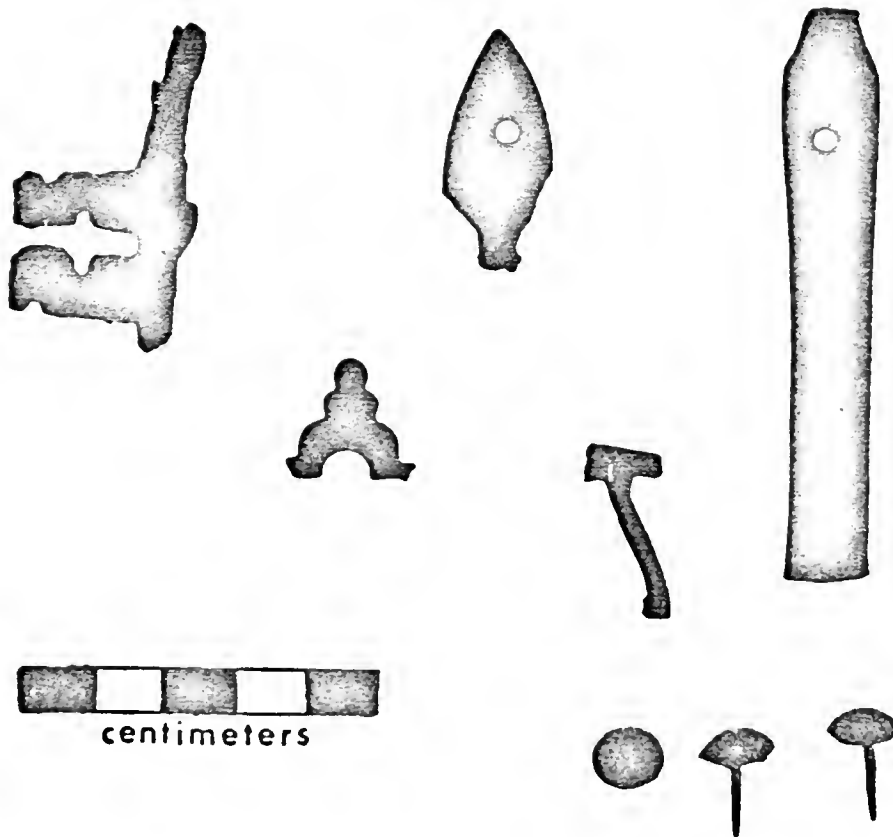


FIGURE 19

Iron Key and Brass Hardware

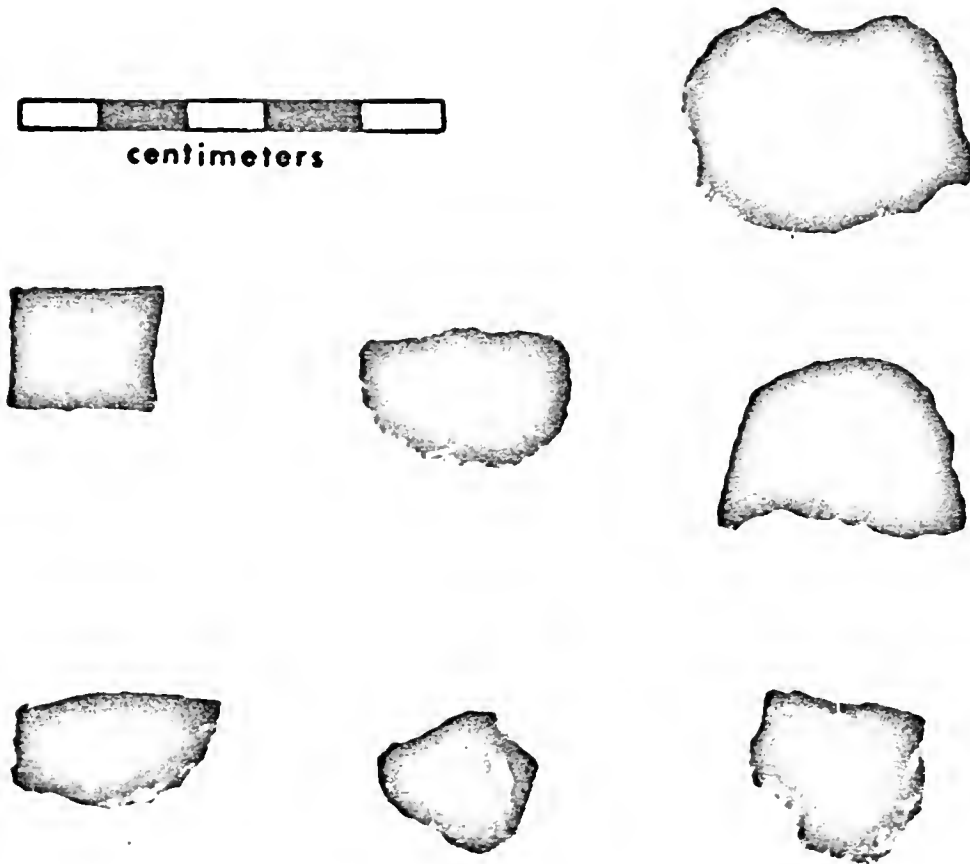


FIGURE 20

Gunflints and Gunspalls

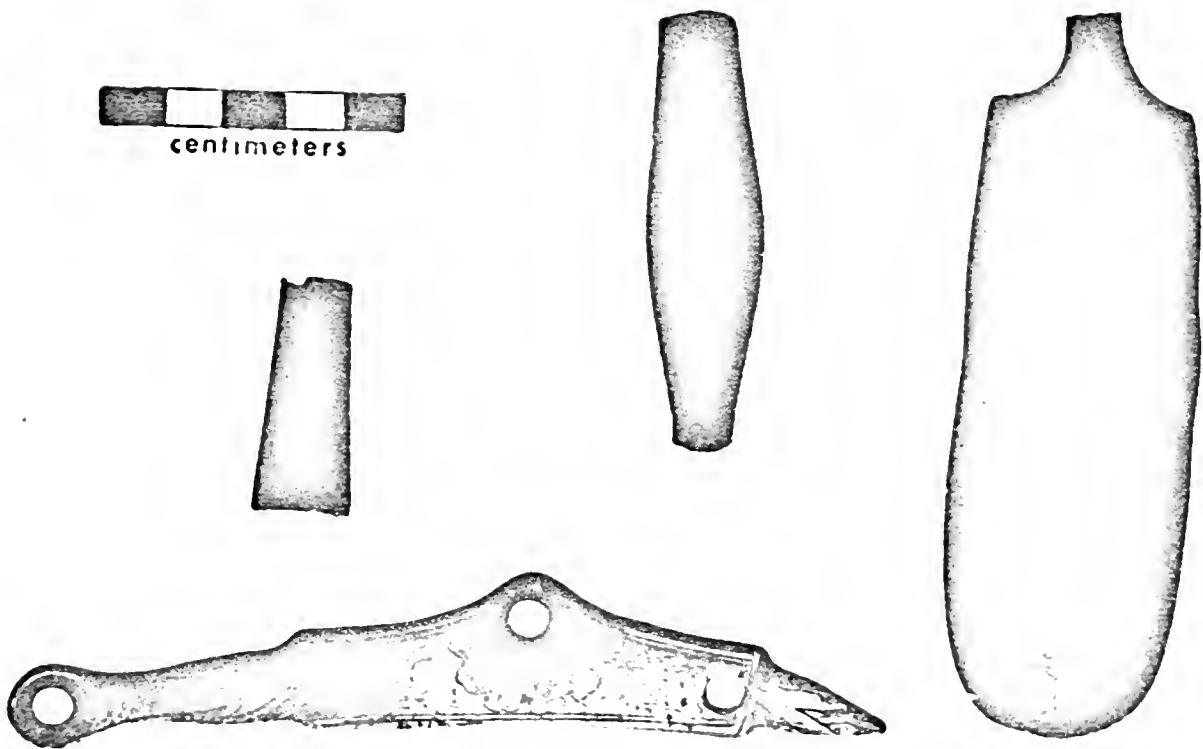


FIGURE 21

Brass Gun Hardware

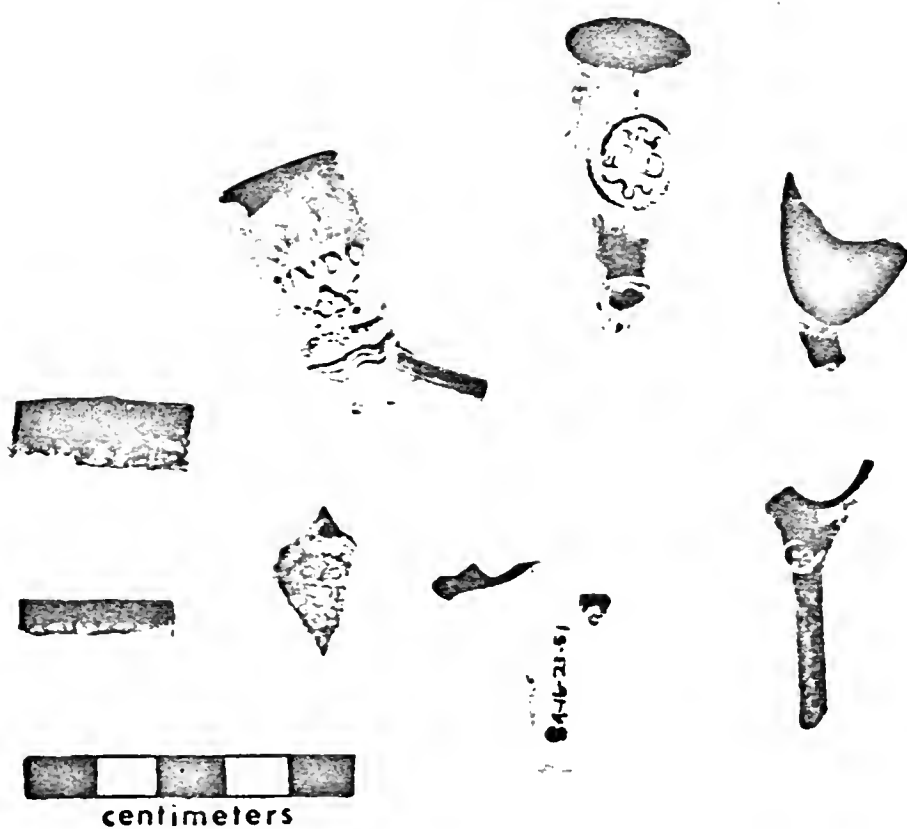


FIGURE 22
White Clay Pipe Fragments

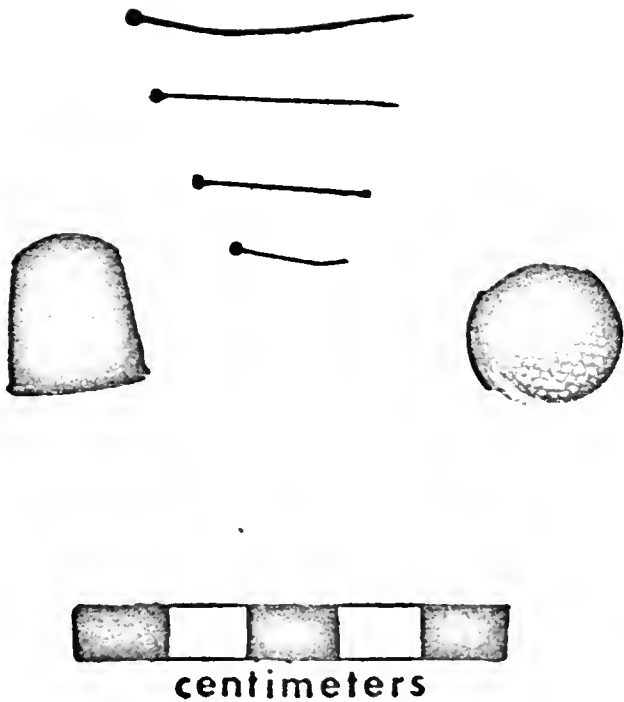


FIGURE 23
Women's Craft Items

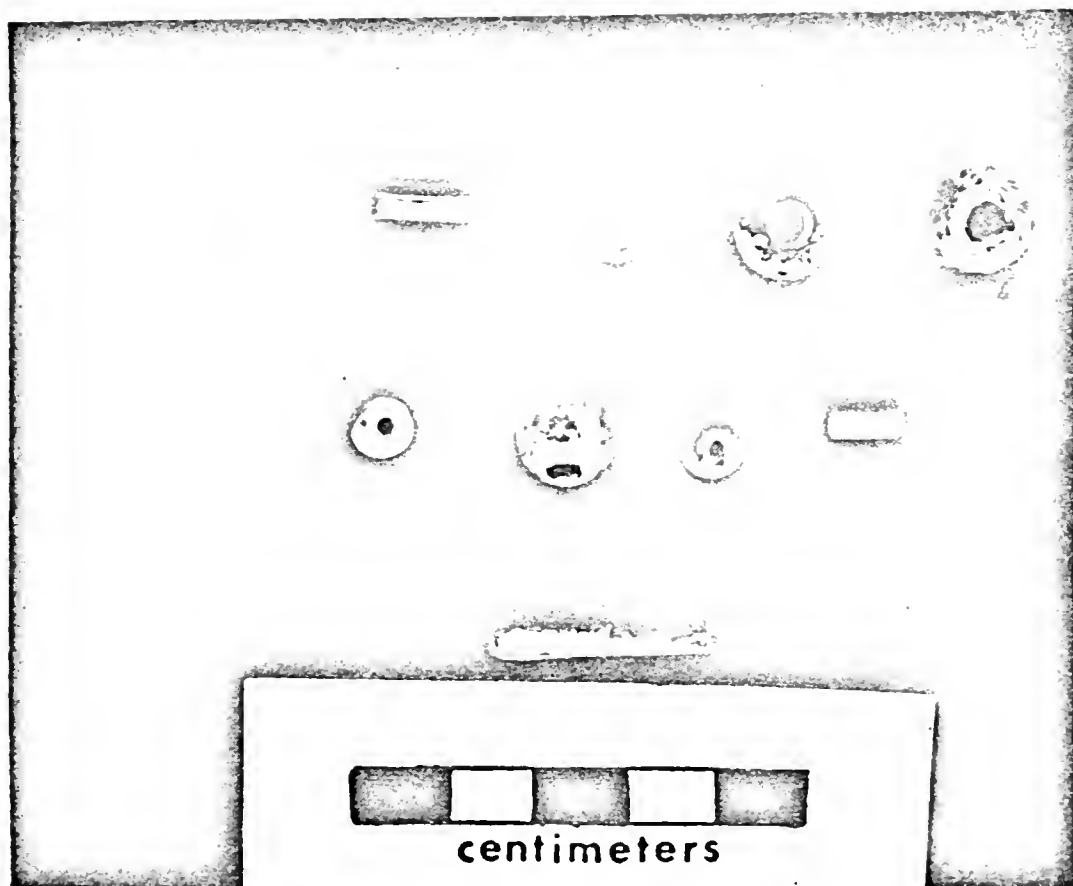


FIGURE 24

Beads from Closed Proveniences
(see Table 4)

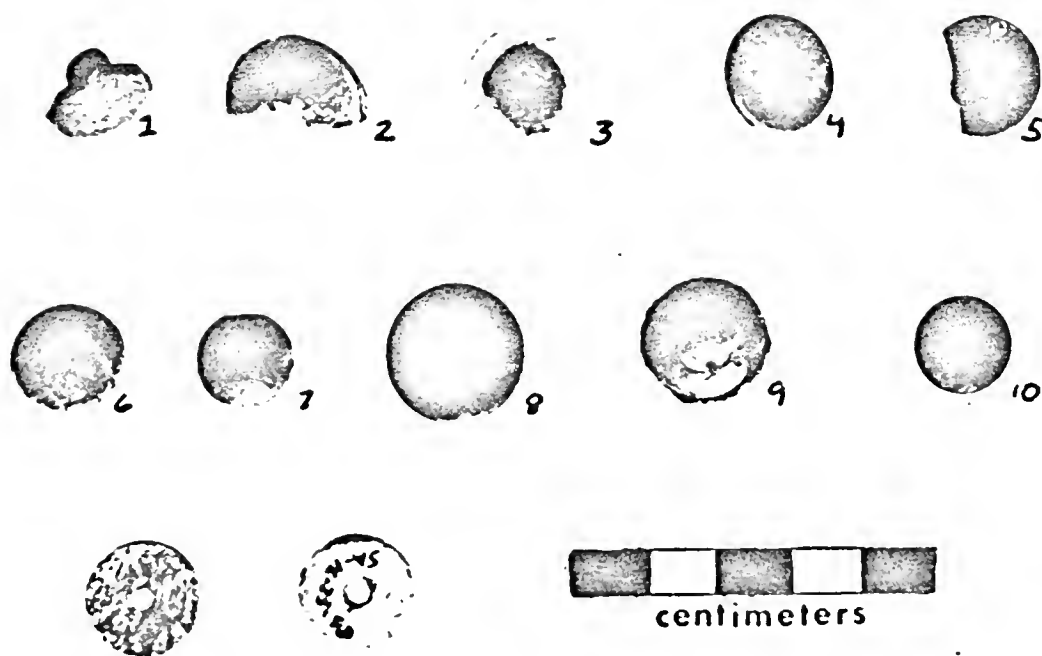


FIGURE 25

Buttons from Closed Proveniences

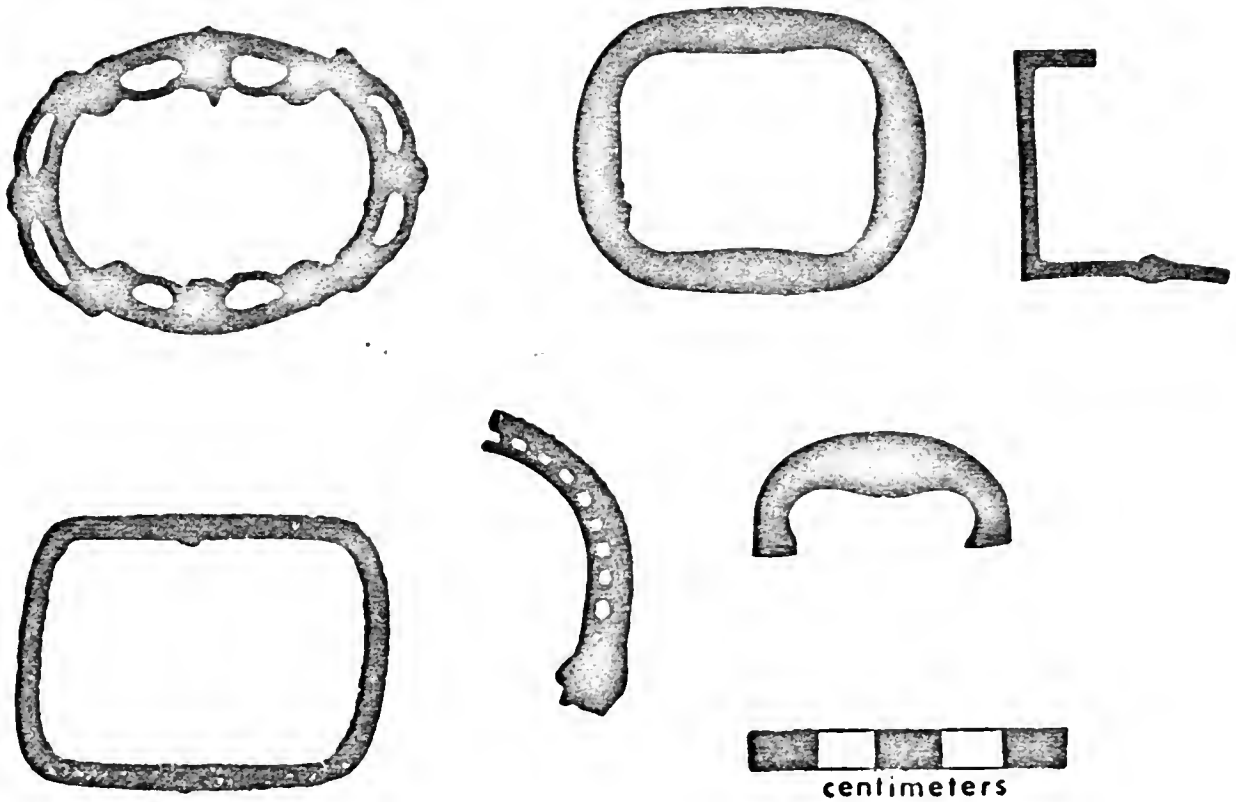


FIGURE 26
Metal Buckles

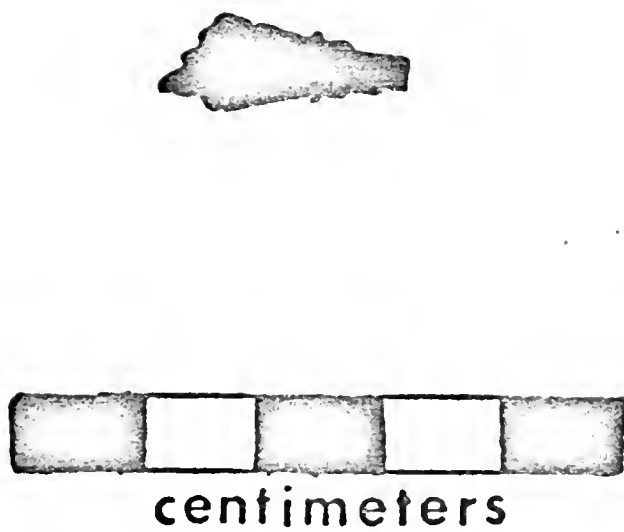
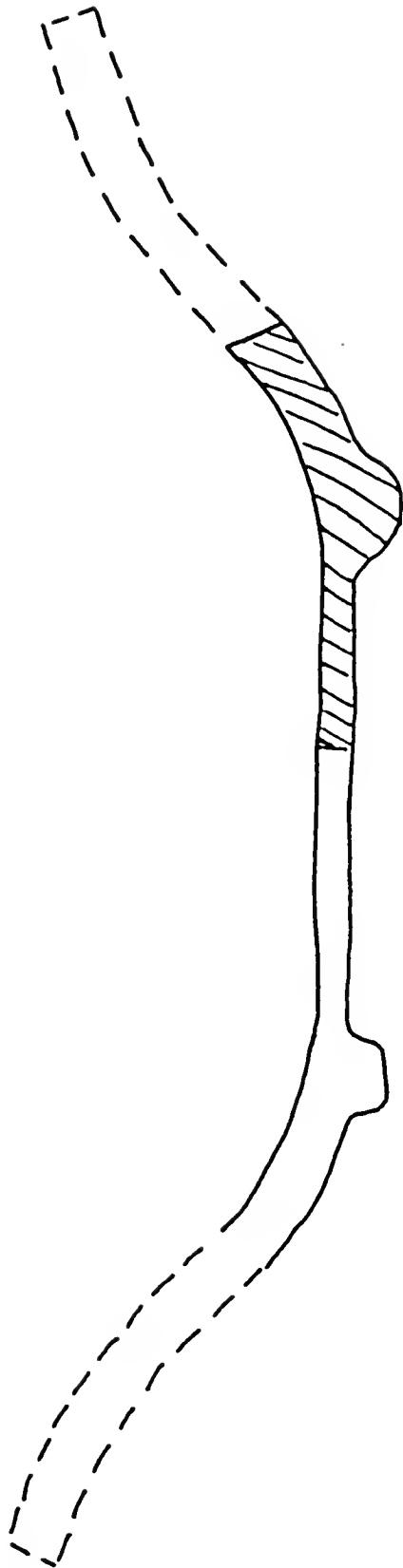
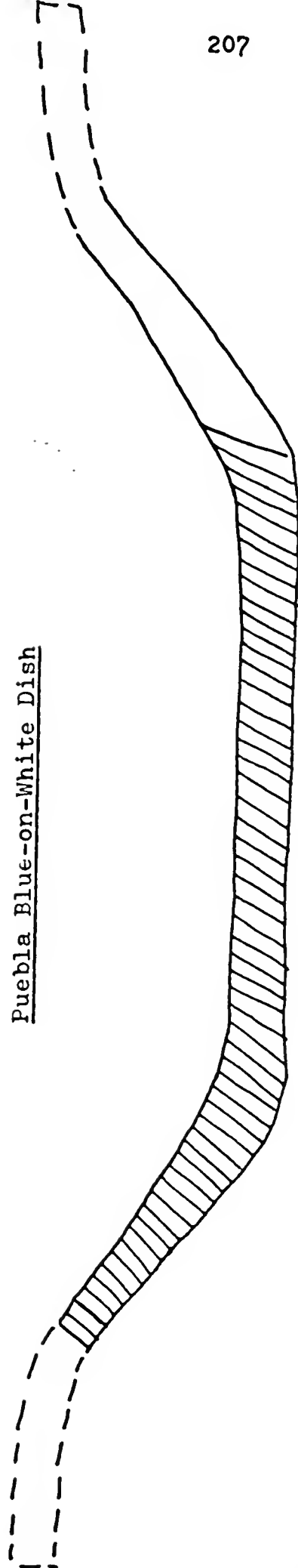


FIGURE 27

Ebony Figa Amulet



San Luis Polychrome Saucer



Puebla Blue-on-White Dish

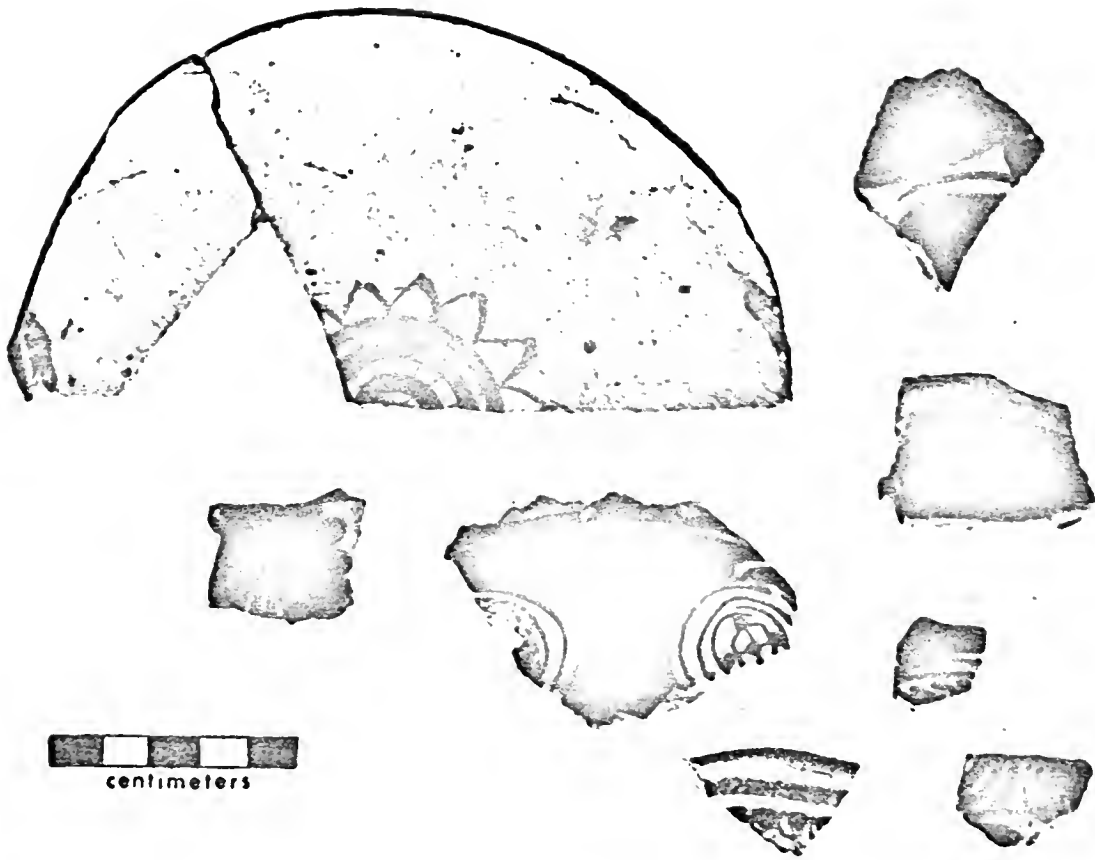


FIGURE 29 Majolica Sherds

left to right (top to bottom): Puebla Blue-on-White,
San Luis Polychrome, San Augustin Blue-on-White,
Puebla Polychrome, San Luis Polychrome, Unnamed
green, pink, and white; brown on white



FIGURE 30

Delftware Sherds

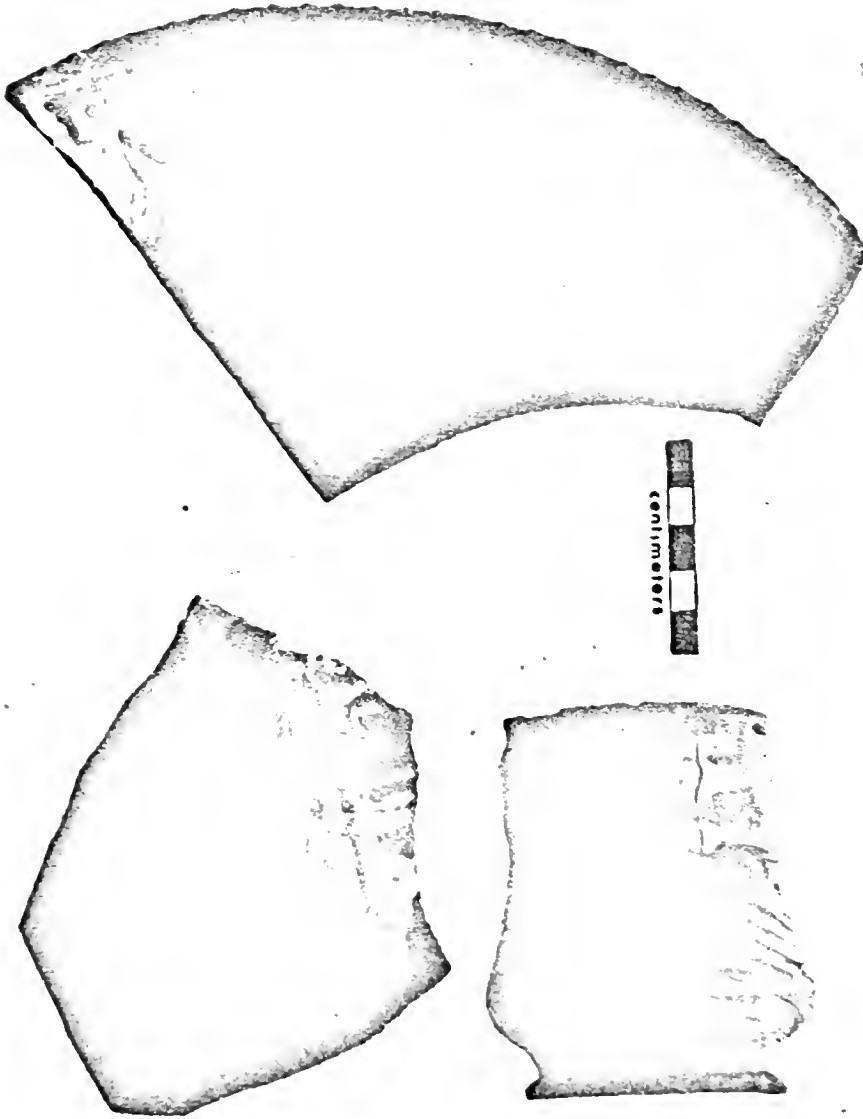


FIGURE 31

Slip-Decorated Earthenware Sherds

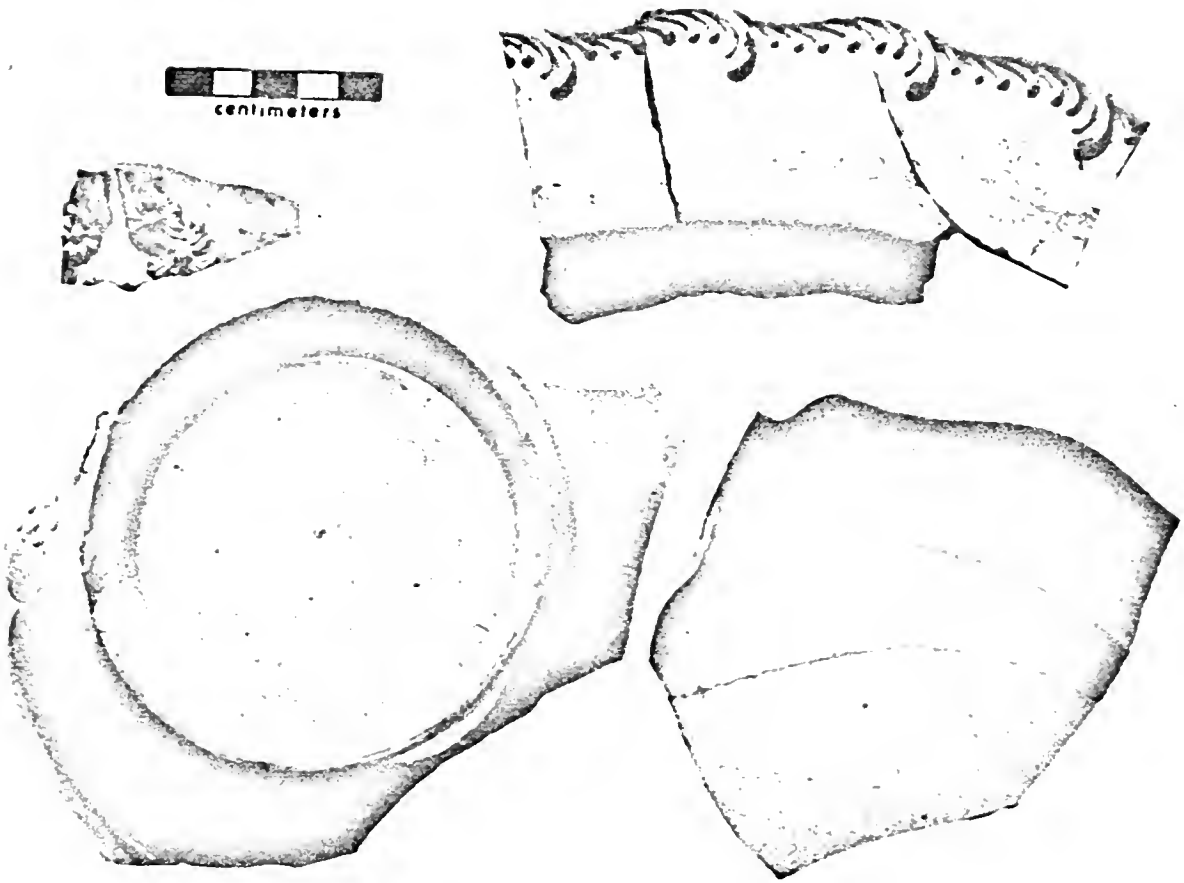


FIGURE 32

Creamware Sherds

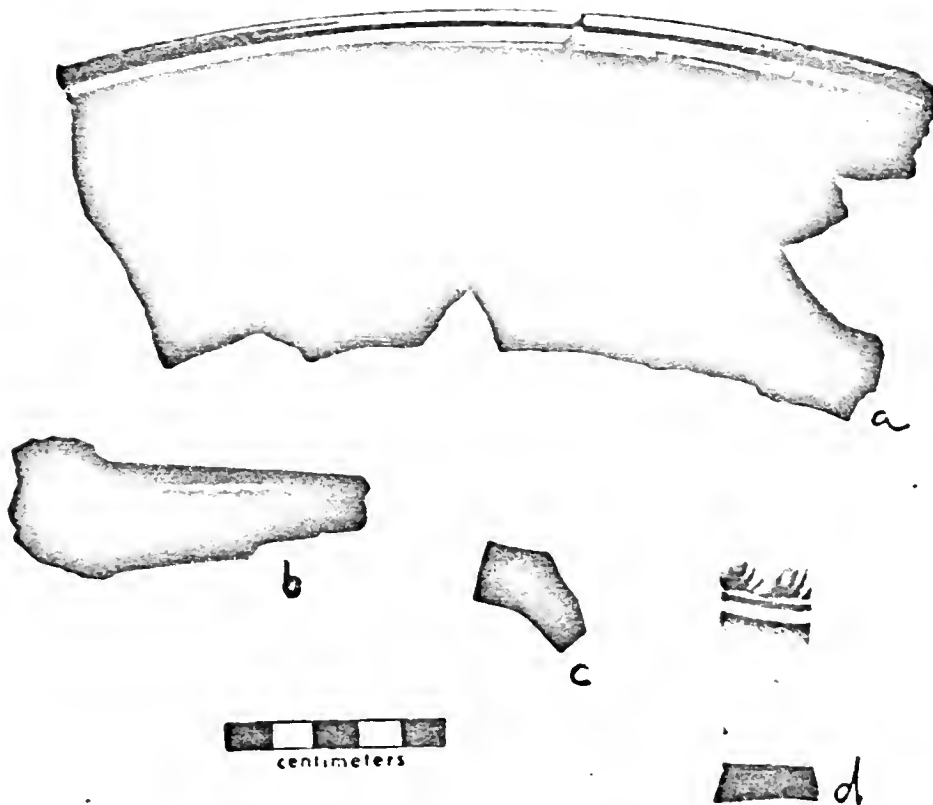


FIGURE 33

Refined Earthenware Sherds

a. Agateware; b. Jackfield; c. Astbury ware; d. White Salt-Glazed Stoneware

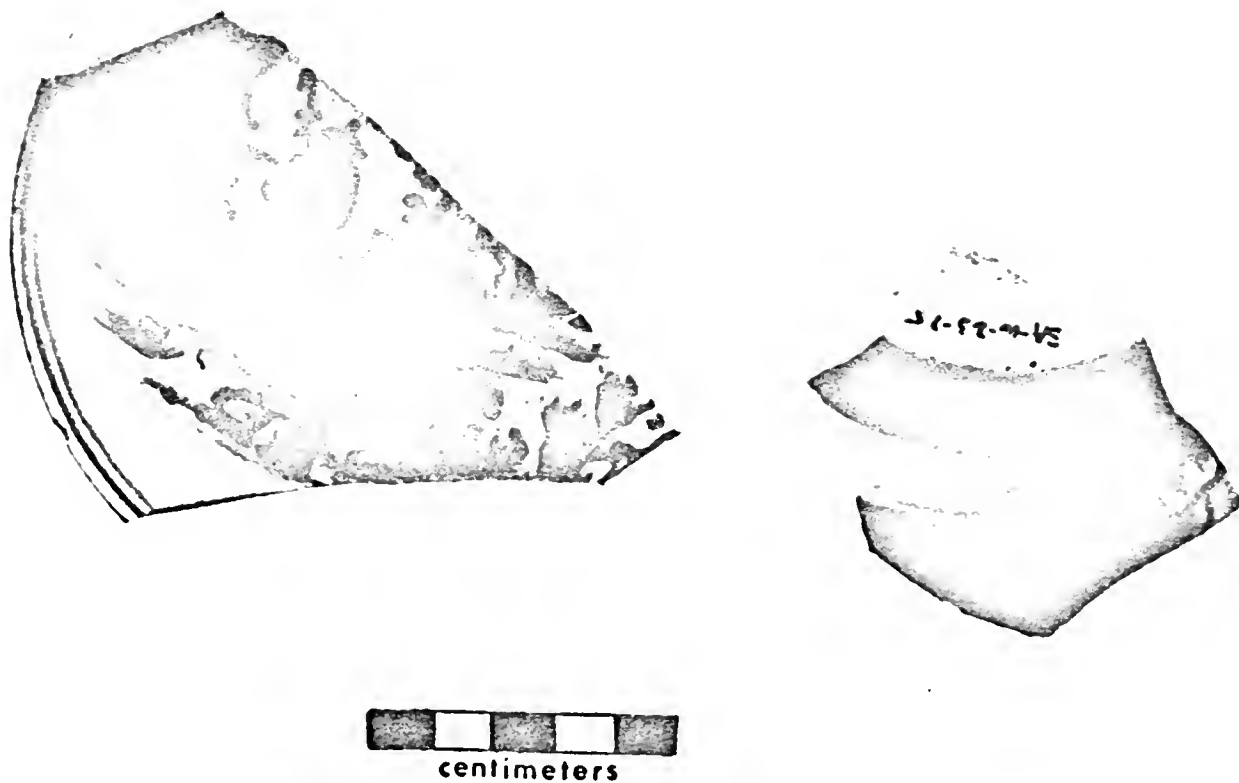


FIGURE 34

Blue and White Chinese Porcelain

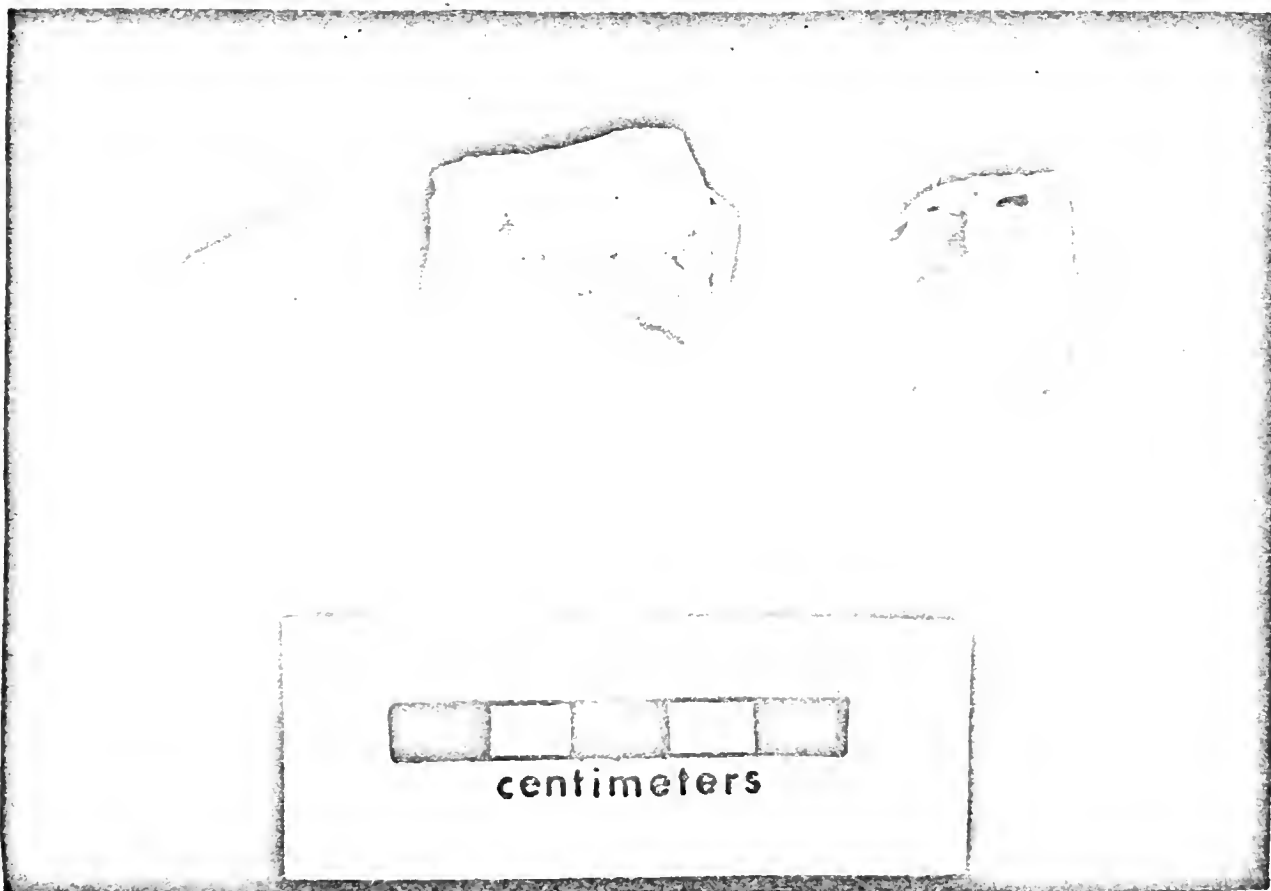


FIGURE 35
Ornamental Glass

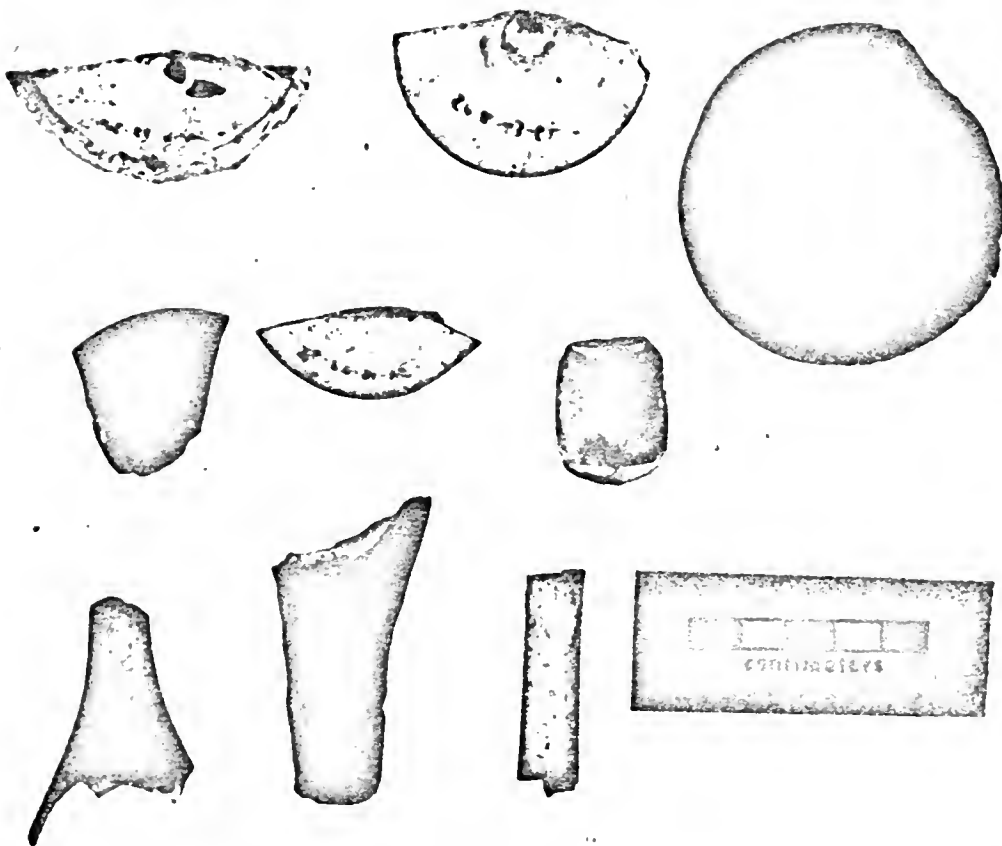


FIGURE 36

Tableware Glass

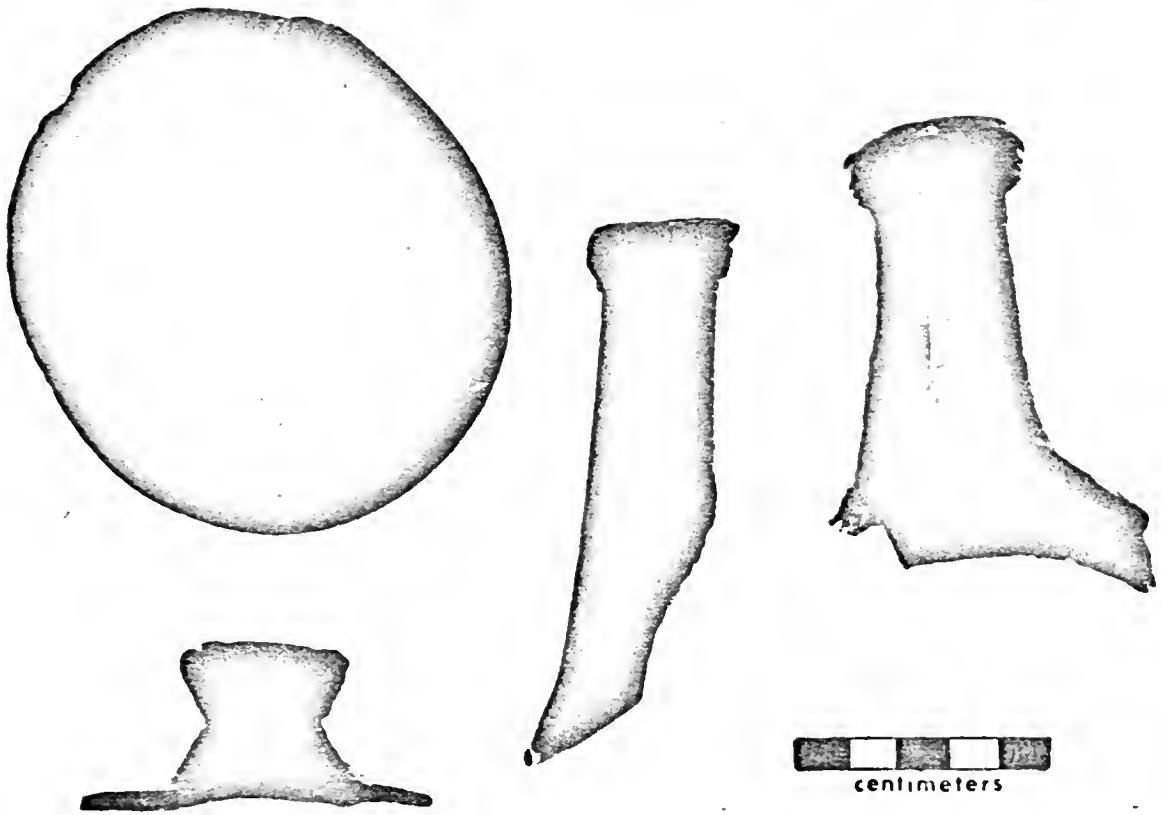


FIGURE 37

Olive Green Glass Bottles

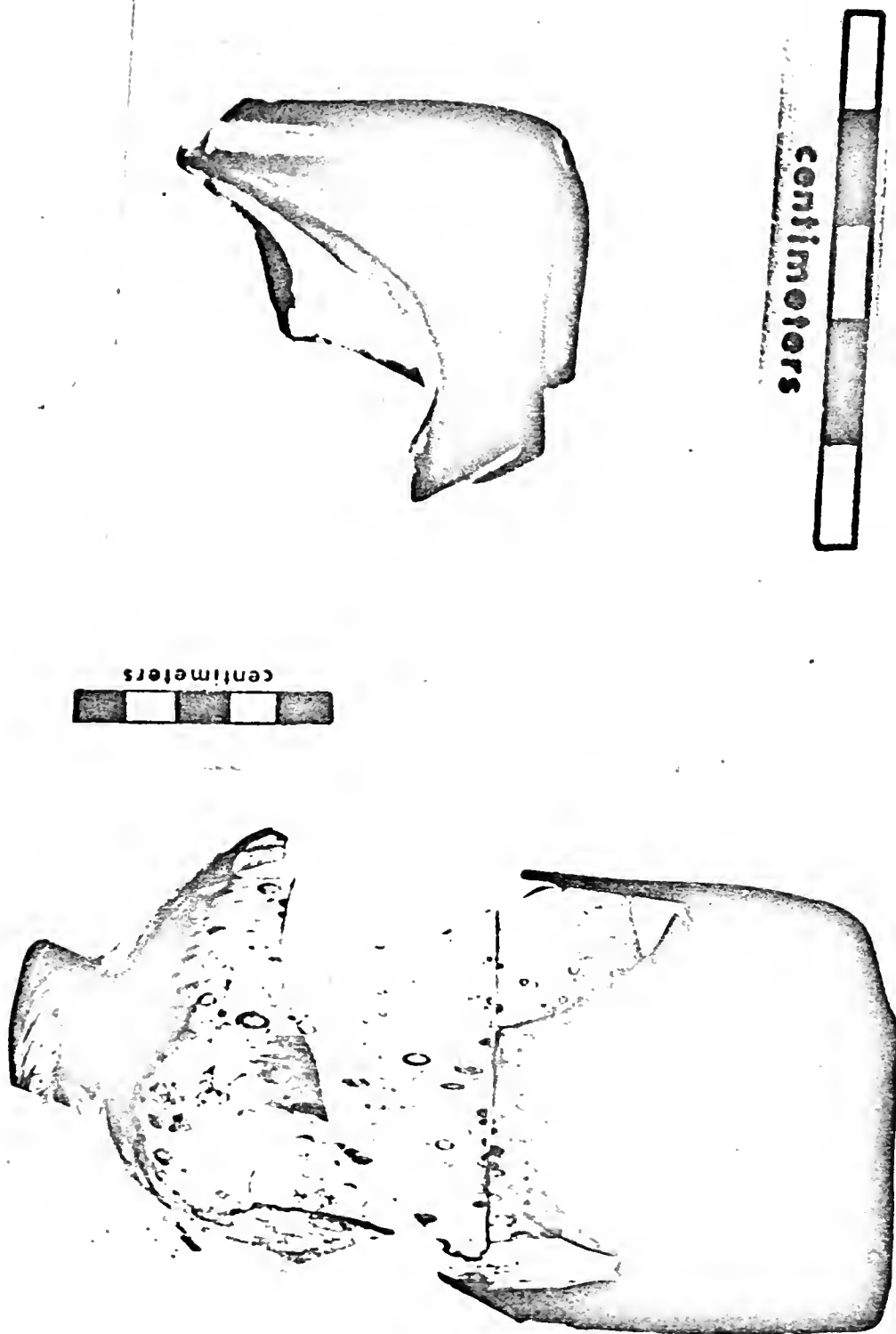


FIGURE 38 Green Glass Jars

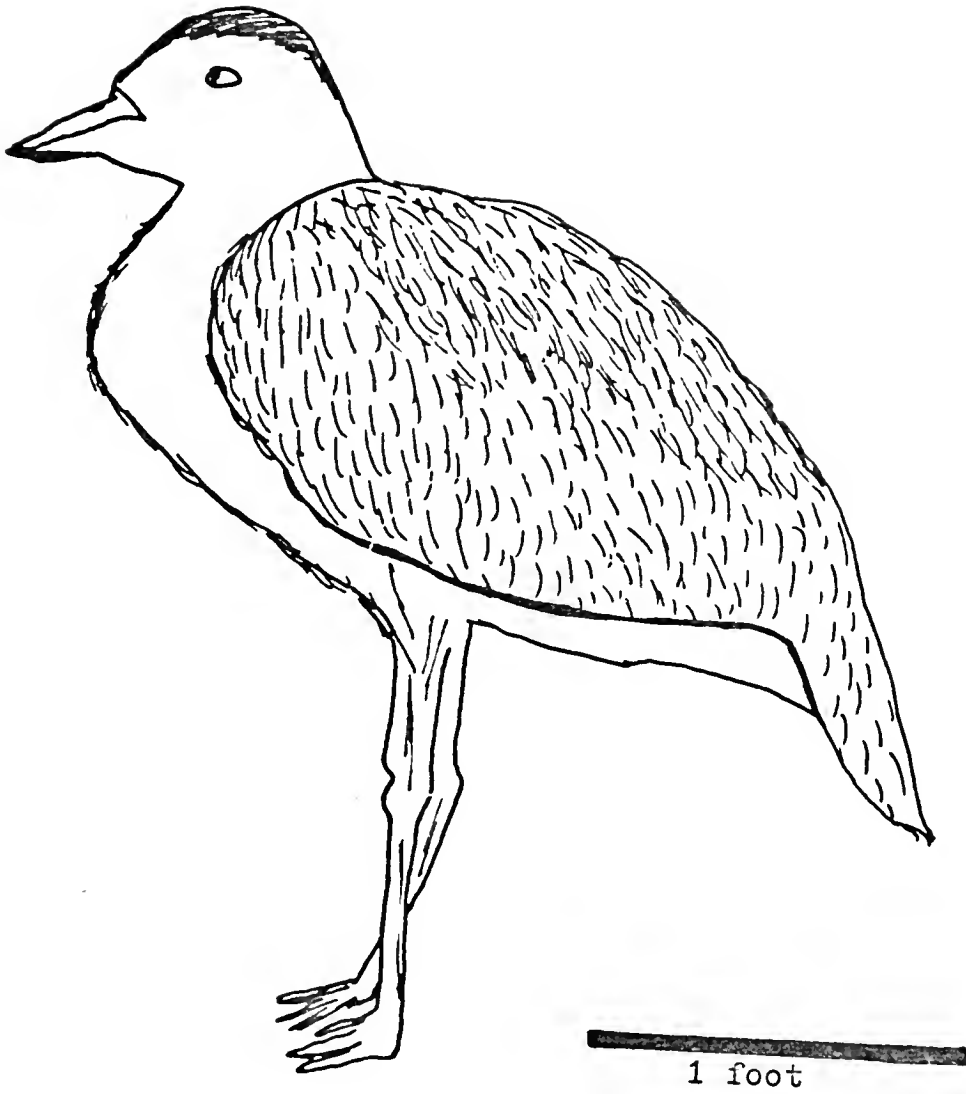


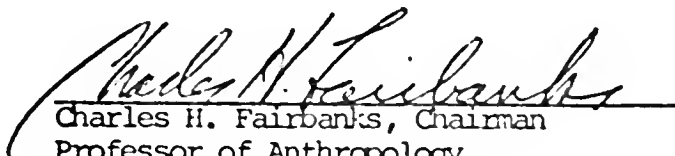
FIGURE 39

Mexican Thick Knee (*Burhinus bistriatus*)
(after Thompson 1964:75)

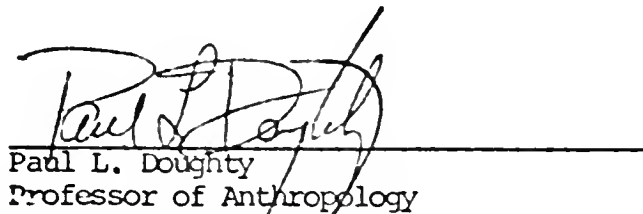
BIOGRAPHICAL SKETCH

Kathleen A. Deagan was born on September 15, 1948, in Norfolk, Virginia. She attended High School at the Academy of Our Lady of Guam, and received a B.A. in Anthropology from the University of Florida in March, 1970. She received a Ph.D. from the University of Florida in June of 1974, after carrying out archeological and historical research in Florida and Georgia.

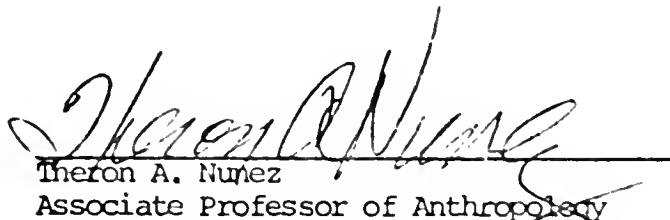
I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Charles H. Fairbanks, Chairman
Professor of Anthropology

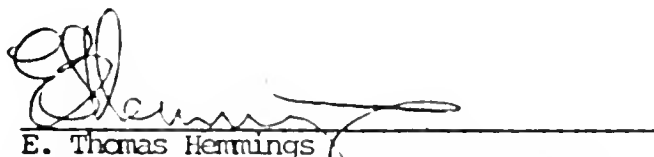
I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Paul L. Doughty
Professor of Anthropology


I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Theron A. Nunez
Associate Professor of Anthropology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


E. Thomas Hemmings
Assistant Curator of Social Sciences,
Florida State Museum

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

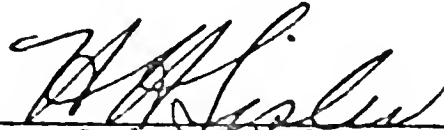


Michael V. Gannon

Associate Professor of Religion

This dissertation was submitted to the Department of Anthropology in the College of Arts & Sciences and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

June, 1974



Dean, Graduate School

